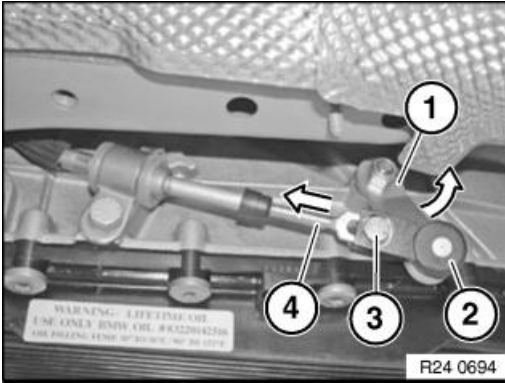


**Note:**

Check cable for ease of movement.

Move selector lever to "P" position.



Press gear lever (1) forward into park position.

Clip shift cable head (2) onto ball head of gear lever.

Release bolt (3).

Press cable (4) in direction of arrow, then release again.

Tighten screw (3).

Tightening torque [25 16 8AZ](#) .

**Installation:**

Move selector lever to "P" position.

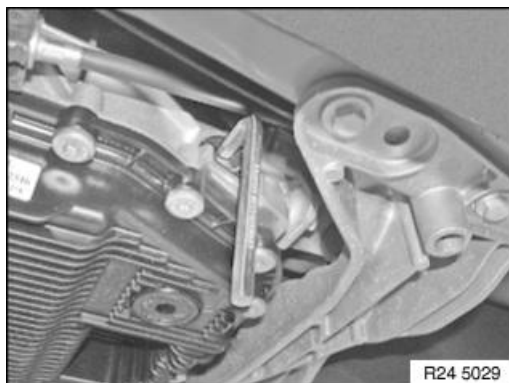
Check whether parking gear is engaged by turning propeller shaft.



Important!

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

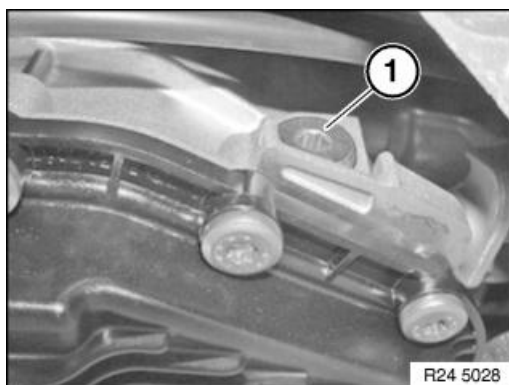
Failure to comply with this requirement will result in serious damage to the automatic transmission!



Installation note:

Tighten down oil filler plug using

1. Hexagon wrench AF 8
2. Torque wrench
3. Socket AF 8



Topping up transmission oil after a repair:

Stand vehicle on a level surface and secure against rolling off.

Undo oil filler plug (1).

Installation note:

Replace the sealing ring.

Top up automatic transmission fluid until it emerges from oil filler opening.

Start engine.

Top up automatic transmission fluid until it emerges from oil filler opening.

Screw in oil filler plug (1).

Tightening torque: [24 11 7AZ](#).

Press brake pedal to floor and shift through gears 1 to 6 several times at idle speed. Then shift to selector lever position "Park".

Then check oil level.



Note:

Start the engine before checking the oil level or opening the oil filler plug.

Checking oil level:

- Connect BMW Diagnosis and Information System (DIS) or BMW MoDiC to vehicle.
- Call up Service functions (drive).
- Carry out oil level check in accordance with instructions.



Special tools required:

- [2 405 614](#)



Important!

- Do not let skin come in contact with transmission oil and do not inhale fuel vapours.
- Wear protective gloves.
- Ensure adequate ventilation.



Important!

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

To set the correct level, it is **mandatory** that the service function "Transmission control unit: oil adjustment" is performed using the diagnosis system.

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

Conditions for oil level adjustment with BMW diagnosis system:

- Initial condition: Transmission oil temperature 30° to 40°C
- Final condition: Transmission oil temperature 40° to 50°C



Performing oil-level adjustment:

An oil-level adjustment is necessary for certain fault code entries in the automatic transmission and after repair (e. g. mechatronic replacement, converter replacement, transmission replacement).

- Connect diagnosis and information system.
- Open service function (powertrain)
- Carry out oil level check in accordance with instructions

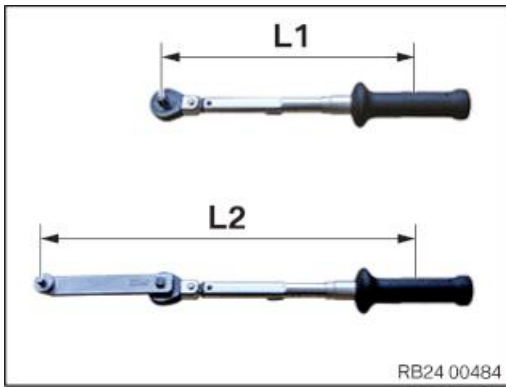


Adding transmission oil:

Stand vehicle on a level surface and secure against rolling off.

Release oil filler screw (1) by means of special tool [2 405 614](#).

Add automatic transmission fluid according to instructions in the BMW diagnosis system.



Important!

When using special tool [2 405 614](#), the setpoint torque deviates from the torque to be set.

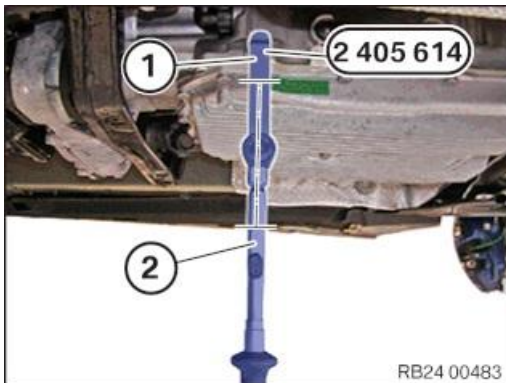
Conversion of setpoint torque -> torque to be set:

$(\text{setpoint torque} \times L1) : L2 = \text{torque to be set}$.

L1 = Length of handle centre to the ratchet head.

L2 = Length of the handle centre to the action point of special tool.

Desired tightening torque: [24 11 3AZ](#)



Parts: Replace oil filler plug and sealing ring.

Note: Special tool (1) and torque wrench must be aligned in a line at the time of tightening.

Tighten down oil filler plug using

1. Special tool [2 405 614](#).
2. Torque wrench

**Danger of poisoning!**

Ingesting oil or absorbing through the skin may cause poisoning!

Possible symptoms are:

- Headaches
- Dizziness
- Stomach aches
- Vomiting
- Diarrhoea
- Cramps/fits
- Unconsciousness

**Protective measures/rules of conduct:**

- Pour oil only into appropriately marked containers
- Do not pour oil into drinking vessels (drinks bottles, glasses, cups or mugs)
- Observe country-specific safety regulations

**First aid measures:**

- Do not induce vomiting.

If the person affected is still conscious, he/she must rinse out their mouth with water, drink plenty of water and consult a doctor immediately.

If the person affected is unconscious, do not administer anything by mouth, place the person in the recovery position and seek immediate medical attention.



Drain automatic transmission fluid at oil drain plug.

Tightening torque: [24 11 6AZ](#).

Important!

After completion of work, program transmission control unit.



Recycling:

Catch and dispose of escaping transmission oil.

Observe country-specific waste disposal regulations



Important!

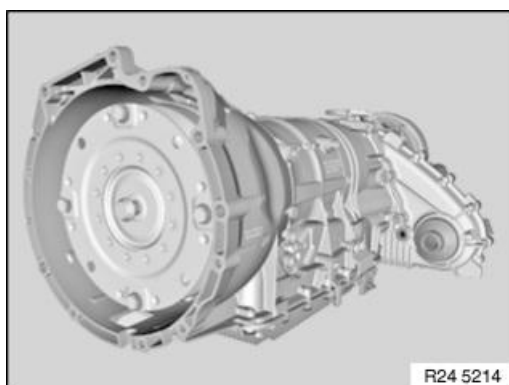
- Before installing exchange transmission, always flush [transmission oil cooler together with lines](#).
 - After completion of repair work, check [transmission oil level](#).
- Exchange transmission is supplied filled with transmission oil.
[Use only the approved transmission oil.](#)

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



Necessary preliminary work:

- Remove [automatic transmission](#).
- Remove [transfer box](#).
- Remount the holder



Remount transportation retainer (1).

Remount all cable clips.

Remount all seal plugs.

Remount protective cap on output shaft.

Important!

After removing transportation retainer, secure torque converter against slipping out.

Transmission identification:

- Refer BMW Group Parts
- On type plate

**Important!**

- Do not let skin come in contact with transmission oil and do not inhale fuel vapours.
- Wear protective gloves.
- Ensure adequate ventilation.



Drain automatic transmission fluid at oil drain plug.

Tightening torque [24 11 2AZ](#).

Important!

After completion of work, program control transmission control unit.

**Recycling:**

Catch and dispose of escaping transmission oil.
Observe country-specific waste disposal regulations.

**Important!**

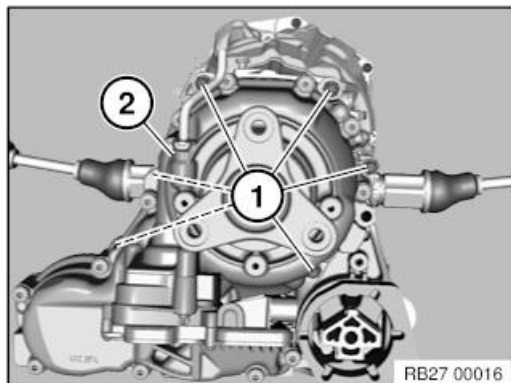
- Before installing replacement transmission, always flush [transmission fluid cooler together with lines](#).
- After completion of repair work, check [transmission oil level](#).
- [Use only approved transmission oil](#).

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

Exchange transmissions come filled with oil

**Necessary preliminary tasks:**

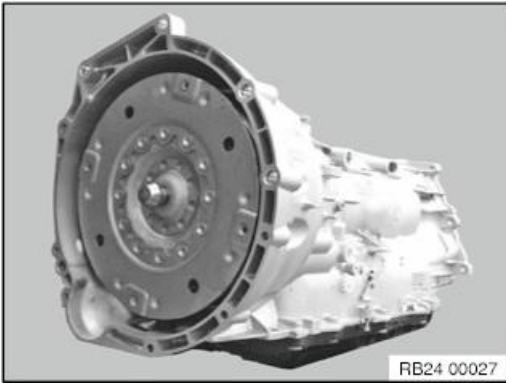
- Remove [automatic transmission](#).



Release screws (1).

Tightening torque [27 10 1AZ](#).

Remount the transfer box (2).



Modify transportation retainers.

Convert all cable clips.

Convert all seal plugs.

Convert protective cap on output shaft.

Important!

After removing transportation retainer, secure torque converter against slipping out.

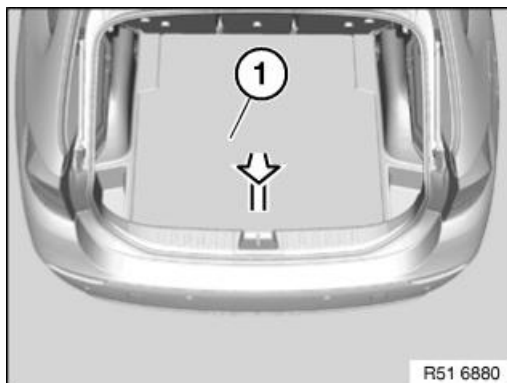
Transmission identification:

- refer to BMW Parts Department.
- On type plate

24 00 033 Remove and install automatic transmission

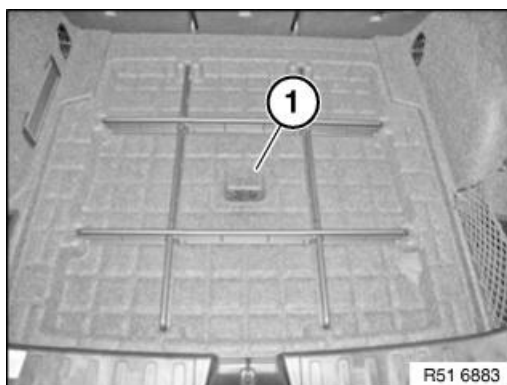
PRELIMINARY WORK

1 – Removing the luggage compartment floor trim panel



- Lift the luggage compartment floor trim panel (1) at the rear and remove it in the direction of the arrow.

2 – Removing the spare wheel well trim panel



- Remove the trim panel of the luggage compartment well (1) towards the top.

3 – Disconnecting the battery earth lead

Prerequisite

Ignition is switched off.



TECHNICAL INFORMATION

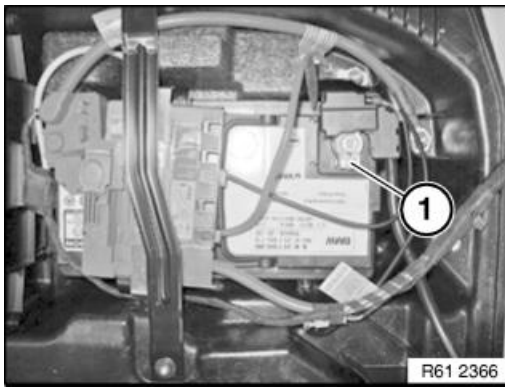
Observe the notes on handling the vehicle battery.

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)



RISK OF DAMAGE

Damage to battery terminal, the safety battery terminal or the intelligent battery sensor (IBS).

Damaged battery terminals can lead to malfunctions or vehicle electrical system faults.

- Pull off battery terminal from battery pole by carefully moving to and fro. Do not pry off using a tool.

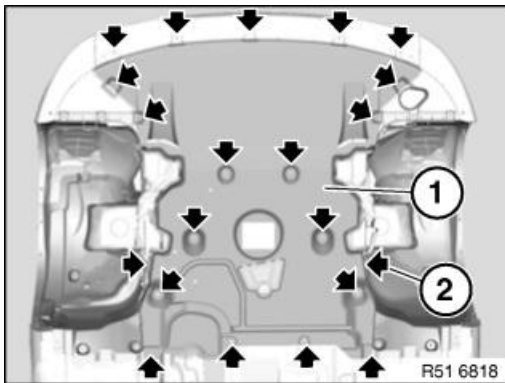
- Slacken nut (1).
- Pull off the intelligent battery sensor (IBS) towards the top and put to one side.

4 – Removing the front underbody protection



NOTICE

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



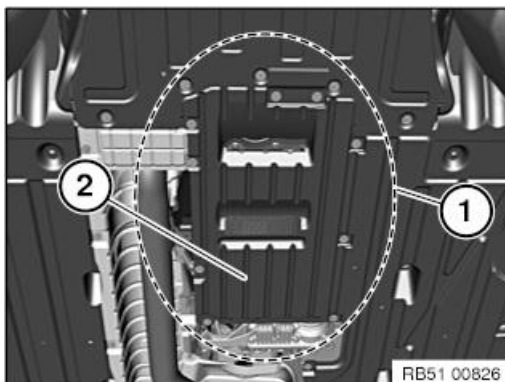
- Remove the screws (arrows) (2).
- Remove the front underbody protection (1).

5 – Removing rear underbody protection



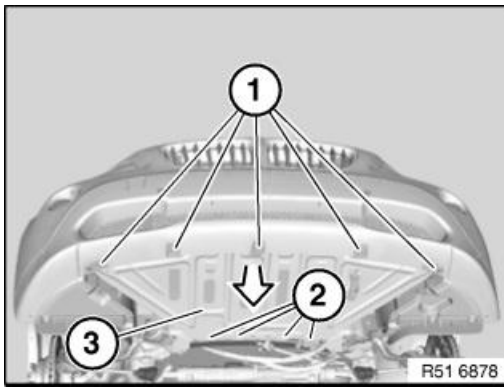
NOTICE

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



- Loosen screws in the area (1).
- Remove the rear underbody protection (2).

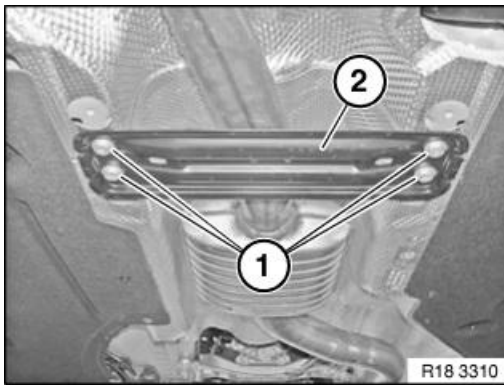
6 – Remove pedestrian protection



- Loosen screws (1).
- Loosen screws (2).
- Remove the pedestrian warning (3) at an angle towards the bottom rear.

- **When replacing the pedestrian warning:**
Remount sheet metal nuts.

7 – Removing the reinforcement



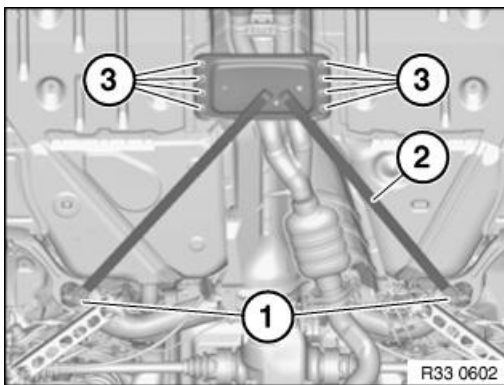
- **For equipment specification without panorama glass roof:**
 - **Remove reinforcement plate**
- Loosen the screws (1) and remove the reinforcement plate (2).

- **For equipment specification with panorama glass roof:**
 - **Remove trailing link**



TECHNICAL INFORMATION

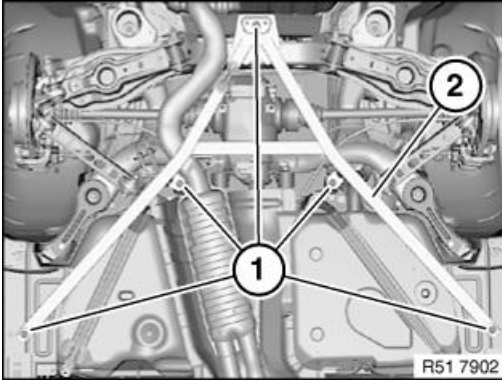
Driving without the strut brace/front end or tension strut is not permitted.



- Loosen screws (1).
- Loosen screws (3).
- Remove the tension struts (2).

- **For equipment specification with panorama glass roof:**
 - **Removing the tension strut of the rear axle**

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



- Loosen the screws (1) and remove the tension strut (2).

8 – Removing the exhaust system (without diesel particulate filter)

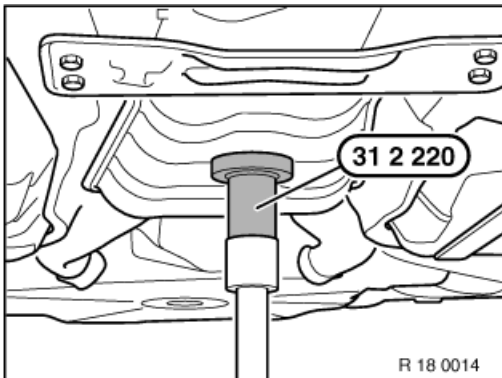


WARNING

Hot surfaces.

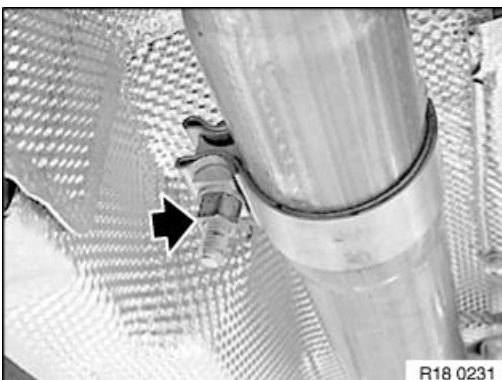
Risk of burning!

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

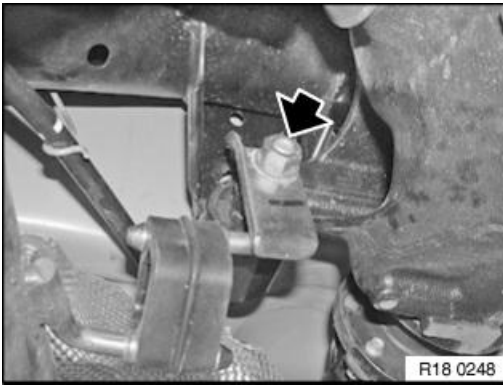


- Support the exhaust system using the special tool **0 491 932 (31 2 220)** and secure against dropping.

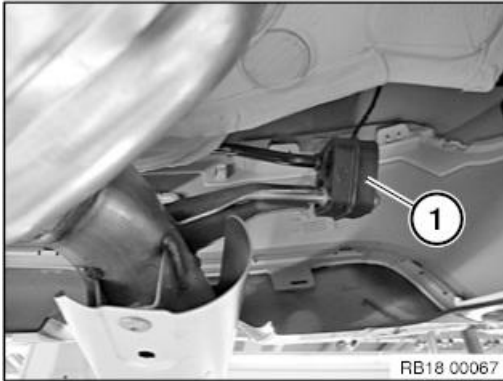
The exhaust system may weigh up to 40 kg.



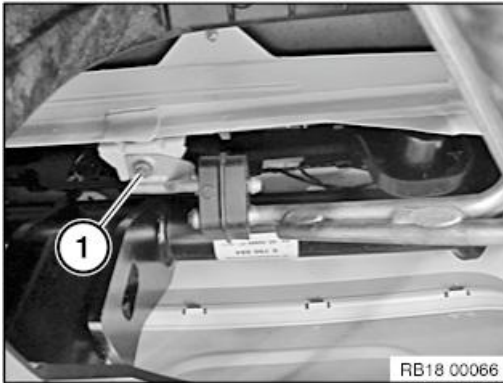
- Unscrew the nut (arrow).



- Unscrew the nut (arrow).



- Pull off the rubber mount (1) from the rear silencer.



- Loosen screw (1).

- Remove exhaust system.

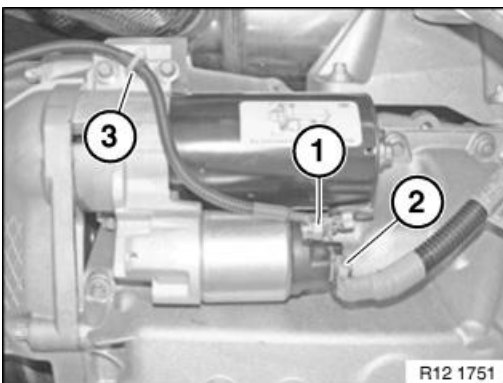
9 – Remove heat shields

- Remove the heat shields around the propeller shaft.

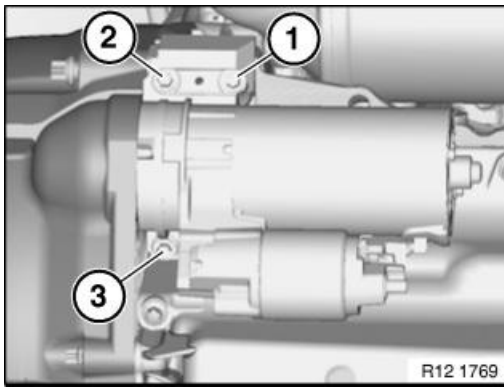
10 – Removing starter motor

Prerequisite

Battery earth lead is disconnected.



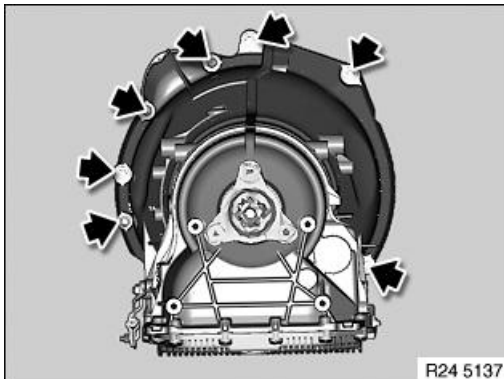
- Loosen the nut (1) and remove the cable.
- Loosen the nut (2) and remove the positive battery cable.
- Loosen the cable on the clamp (3) from the starter motor.



- Loosen screw (1).
- Loosen screw (2).
- Loosen screw (3).
- Remove starter motor.

MAIN WORK

11 – Remove automatic transmission

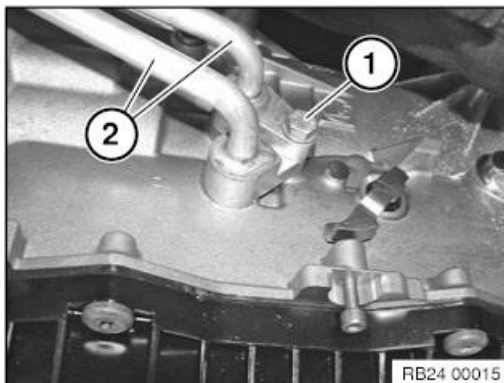
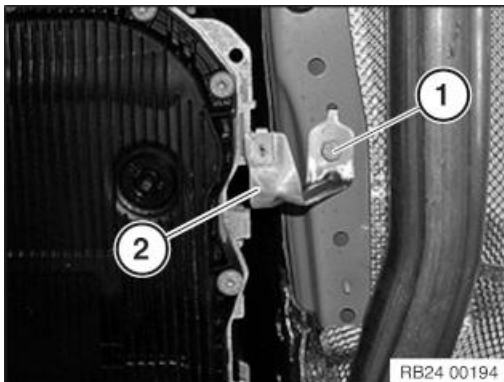


i

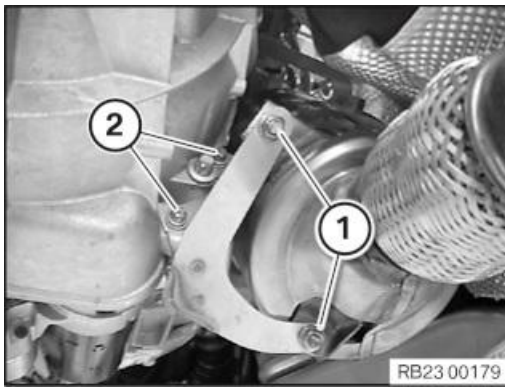
TECHNICAL INFORMATION

To prevent damage to the engine and transmission, check the thread before removal. If the threads are corroded, you must remove rust and clean them before removal.

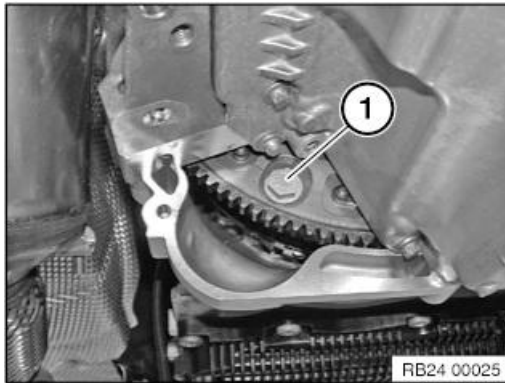
- Check the threads (arrows) for corrosion, if necessary, remove rust and clean them.
- Loosen the screw (1) and remove the holder (2).



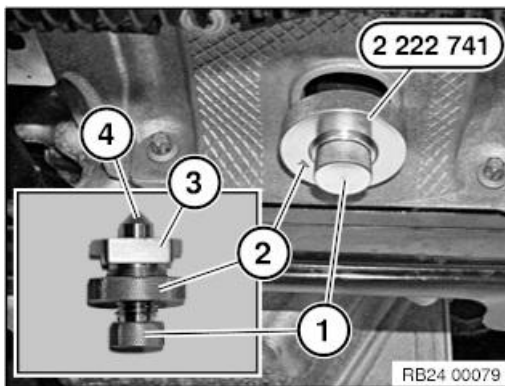
- Loosen screw (1).
- Remove the hydraulic lines (2).



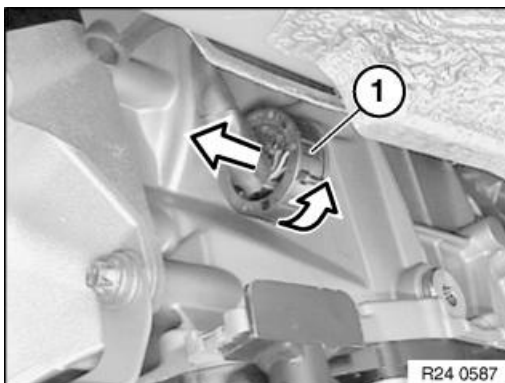
- If necessary, loosen the screws (1) and (2) and remove the holder.



- Crank the engine using special tool **0 493 380 (11 6 480)** on the vibration damper in the direction of rotation until the screw (1) becomes visible in the recess.
- Loosen all four screws of the torque converter using special tool **0 491 667 (24 1 110)**.



- Unscrew the screw (1) of special tool **2 222 741**.
- Insert special tool **2 222 741** including the shaped element (3) into the recess.
- Tighten the nut (2) hand-tight, but do not fully tighten it.
- Completely screw in the screw (1).
- Make sure that the bolt (4) is located between the torque converter and the engine.
- Push the special tool **2 222 741** towards the rear until it is fully in contact with the torque converter.
- Tighten nut (2).



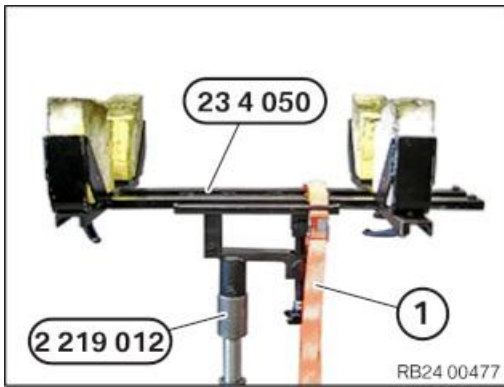
i

TECHNICAL INFORMATION

Notes on mechatronics are a fundamental requirement for these repair instructions and must be complied with at all times.

For more information see: 24 34 ... Notes on mechatronics (GA8HP45Z,GA8HP70Z,GA8HP90Z)

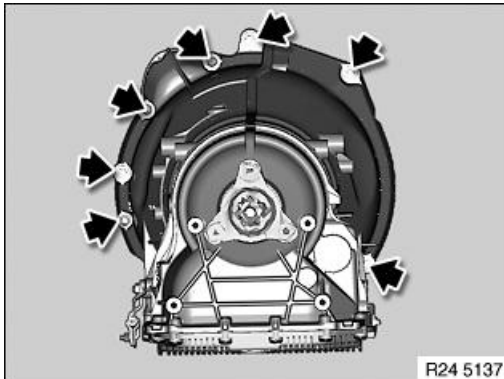
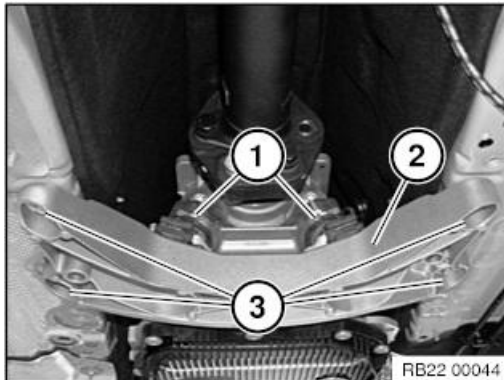
- Twist the connector (1) anticlockwise and pull it off in the direction of the arrow.
- Loosen the cable from the bracket.
- Insert special tool **0 494 213 (24 2 390)** into the connector (1).



TECHNICAL INFORMATION

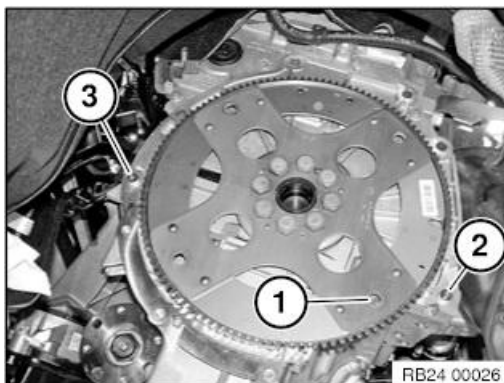
Notes on universal transmission support are a fundamental requirement for these repair instructions and must be complied with at all times.
For additional information see: 24 ... Universal transmission support

- Connect special tool fixture **0 495 498 (23 4 050)** to special tool universal jack **2 219 012**.
- Support the transmission using special tool fixture **0 495 498 (23 4 050)** and special tool universal jack **2 219 012**.
- Secure the transmission with the tensioning strap (1).
- Leave the screws (1) mounted because the transmission cross member (2) must not be removed from the automatic transmission.
- Loosen screws (3).

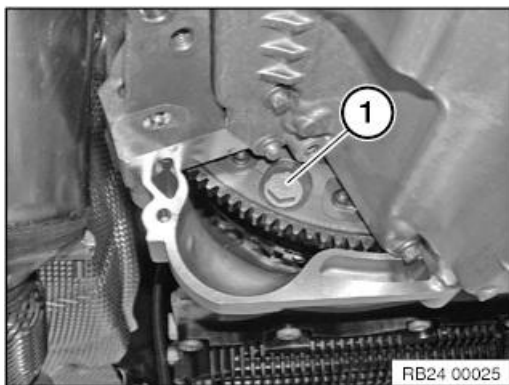


- Remove screws (arrows).
- Remove and lower the transmission.

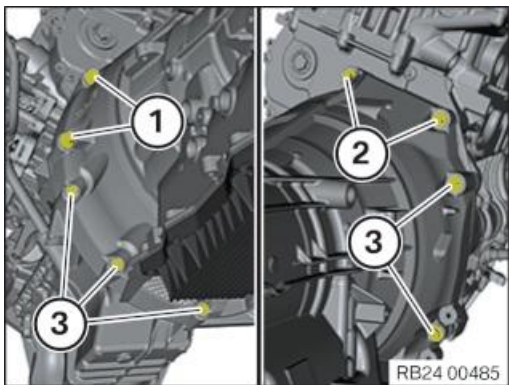
12 – Install automatic transmission



- Turn the drive plate so that the bore hole (1) becomes accessible through the recess on the transmission oil sump.
- Check that the fitting sleeves (2) and (3) are positioned correctly and are not damaged; renew if necessary.
- Turn the torque converter so that the bore hole of the torque converter and the bore hole of the drive plate (1) line up.



- Clean any adhesive residue on the threads of the screw connections (1) of the torque converter.



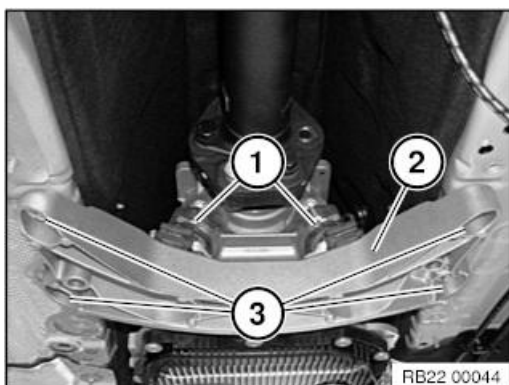
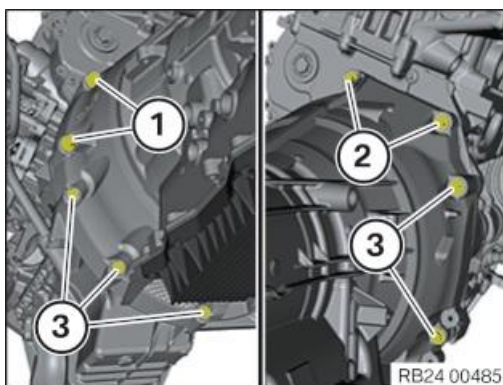
- Lift and flange-mount the transmission.
- Renew screws (1) to (3).

Parts: Bolts

- Tighten the screws (1) to (3).

Transmission to engine

Screw (3) M12x100			66 Nm
Bolt (2) M12x75			66 Nm
Bolt (1) M8x50			19 Nm

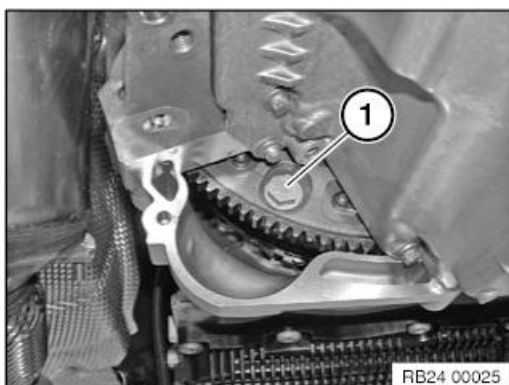


- Renew screws (3).
- Parts:** Bolts
- Position transmission cross member (2) on vehicle underbody and tighten the screws (3).

Holder on the transmission

		19 Nm
--	--	-------

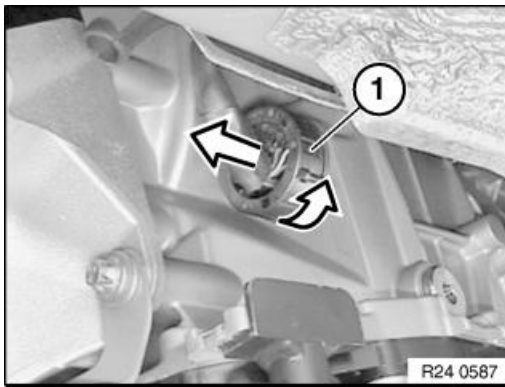
- Make sure that the screws (1) were not loosened.
- Remove all special tools.



- Renew screws (1).
- Parts:** Bolts
- Crank the engine on the vibration damper in the direction of rotation using special tool **0 493 380 (11 6 480)** to tighten all four screws (1).
 - Tighten all four screws (1) with special tool **0 491 667 (24 1 110)**.

Torque converter on the drive plate

M10	Renew screws.	56 Nm
-----	---------------	-------

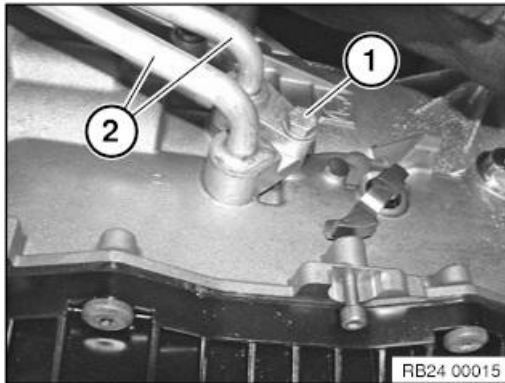


TECHNICAL INFORMATION

Notes on mechatronics are a fundamental requirement for these repair instructions and must be complied with at all times.

For more information see: 24 34 ... Notes on mechatronics (GA8HP45Z, GA8HP70Z, GA8HP90Z)

- Remove special tool **0 494 213 (24 2 390)**.
- Insert the connector (1) in contrary to the direction of the arrow and lock it by twisting it clockwise.
- Insert the cable into the bracket.



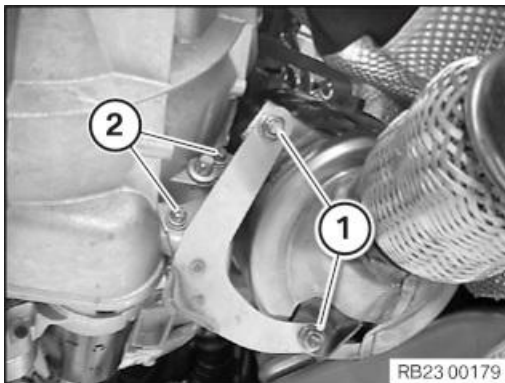
- Renew sealing rings.
- Position the hydraulic lines (2) on the transmission.
- Renew the screw (1).

Parts: Screw

- Tighten down screw (1).

Transmission oil cooler line to transmission

M8		8 Nm
----	--	------



- Renew the screws (1) and (2) if necessary.
- If applicable, attach holder and tighten screws (2).

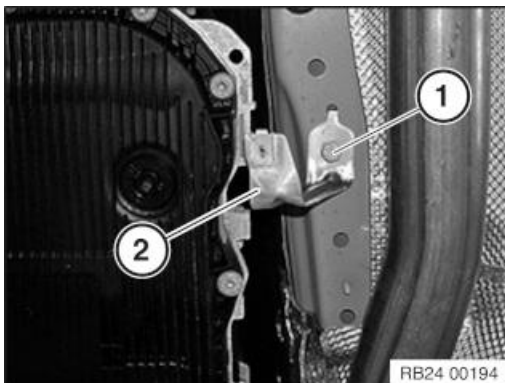
Holder on the transmission

	19 Nm
--	-------

- If applicable, tighten screws (1).

Holder on the diesel particulate filter

	21 Nm
--	-------

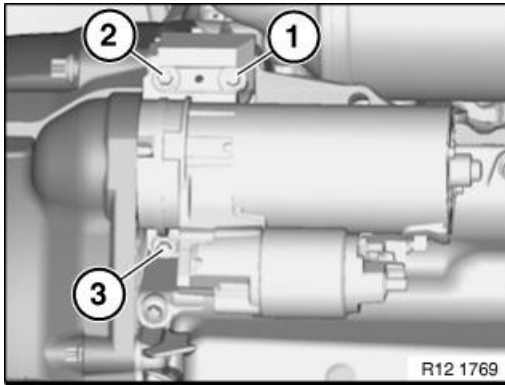


- Attach the holder (2) and tighten the screw (1).

POSTPROCESSES

13 – Installing starter motor

- Check starter pinion and ring gear for damage. Replace starter motor if necessary.



- Position starter motor on oil sump.



TECHNICAL INFORMATION

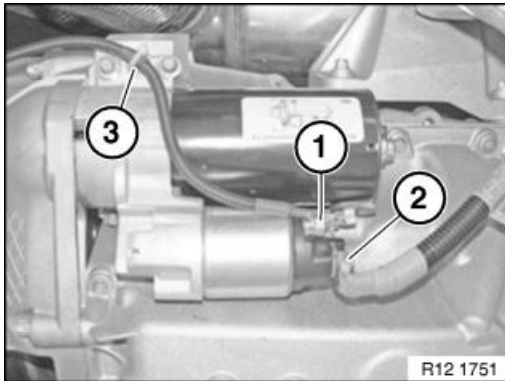
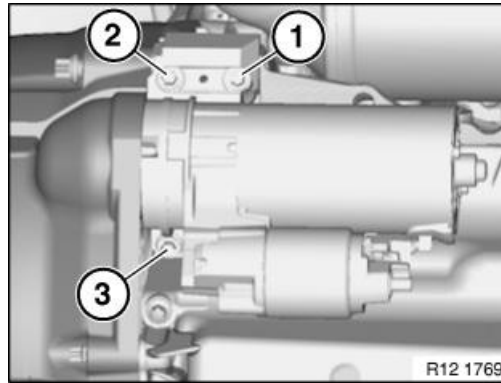
When assembling, it is essential to observe screwing sequences and tightening torques.

Non-observance of these requirements may result in leaks and damage.

- Tighten the screws (1), (2) and (3).

Starter motor

M8x60	<i>Tighten screws in the following sequence (1), (2), (3).</i>	19 Nm
-------	--	-------



- Attach cable to clamp (3) on starter motor.
- Attach positive battery cable and tighten nut (2).

Battery positive lead to starter

M8		13,4 Nm
----	--	---------

- Attach cable and tighten nut (1).

Wiring harness to starter (terminal 50)

M6		7 Nm
----	--	------

- **Only during starter motor replacement or on vehicles with automatic engine start-stop function (MSA):**

Reset start counter using BMW diagnosis system.

14 – Install the heat shields

- Install the heat shields around the propeller shaft.

15 – Installing the exhaust system (diesel particulate filter installed)

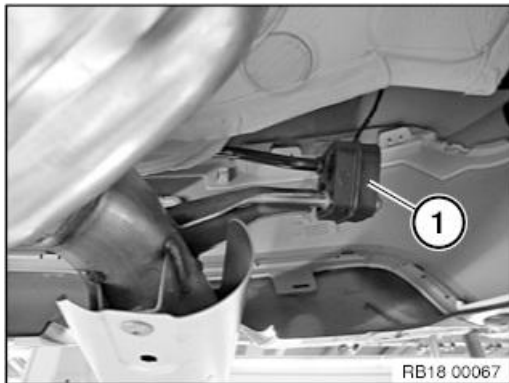
- Align the exhaust system with the vehicle underbody and attach to the front of the diesel particulate filter.



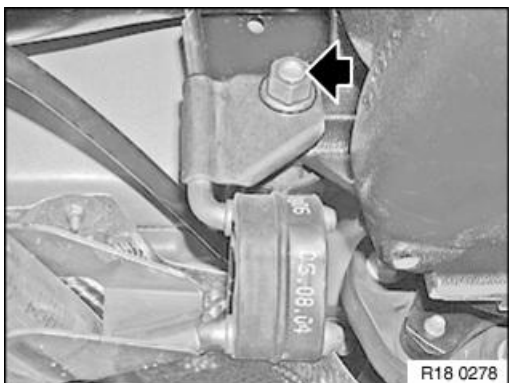
- Tighten down screw (1).

Rear silencer to body

M8		21 Nm
----	--	-------



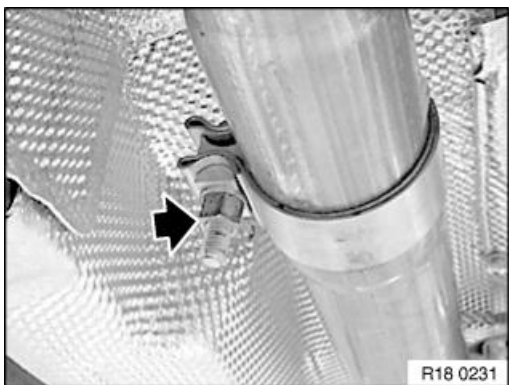
- Check the rubber mount (1) for damage and renew if necessary.
- Connect rubber mount (1) to the rear silencer.



- Tighten the nut (arrow).

Exhaust system bracket

M12x20		30 Nm
--------	--	-------



- Renew flat band clip.
- Tighten the nut (arrow).

Diesel particulate filter / primary catalytic converter to exhaust system

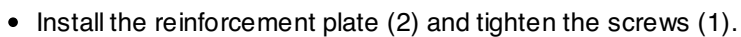
M8	Renew flat band clip.	26 Nm
M10	Renew flat band clip.	43 Nm

- Check exhaust system for leak tightness.

16 – Installing the reinforcement

- For equipment specification without panorama glass roof:

► Installing the reinforcement plate



	19 Nm
--	-------

- For equipment specification with panorama glass roof:

- Install the tension struts (2).
- Tighten down screws (3).

M8		24 Nm
----	--	-------

- Renew screws (1).

Parts: Bolts

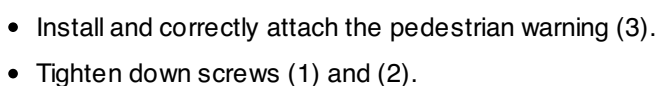
- Tighten the screws (1).

Renew screws.			
M12		Jointing torque	100 Nm
		Angle of rotation	90 °

- **For equipment specification with panorama glass roof:**

- Install the tension strut (2) and tighten the screws (1).

M10		50 Nm
-----	--	-------

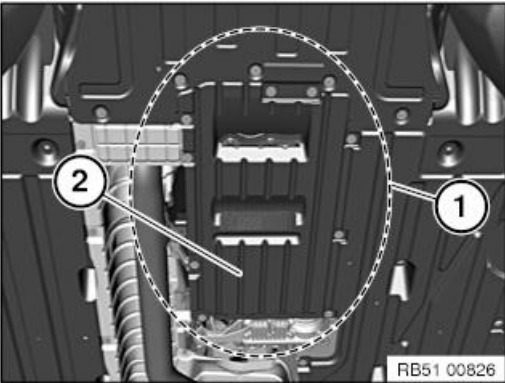


	25 Nm
--	-------

18 – Installing underbody protection at rear

NOTICE

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

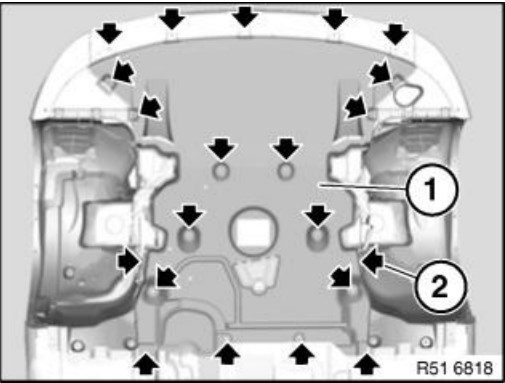


- Attach the rear underbody protection (2).
- Tighten the screws in this area (1).

Underbody panelling on body

Screw not metric			3 Nm
Screw M6			8.8 Nm
Nut			2.5 Nm

19 – Installing the front underbody protection

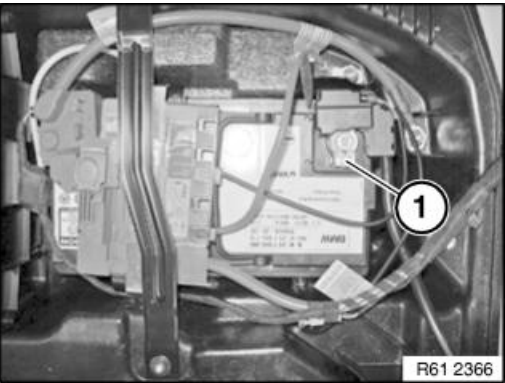


- Position the front underbody protection (1).
- Tighten the screws (arrows) (2).

Underbody panelling on body

Screw not metric			3 Nm
Screw M6			8.8 Nm
Nut			2.5 Nm

20 – Connecting the battery earth lead

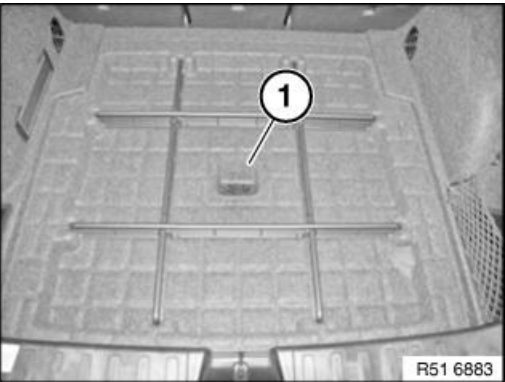


- Position the intelligent battery sensor (IBS) on the vehicle battery.
- Tighten nut (1).

Battery earth lead to battery

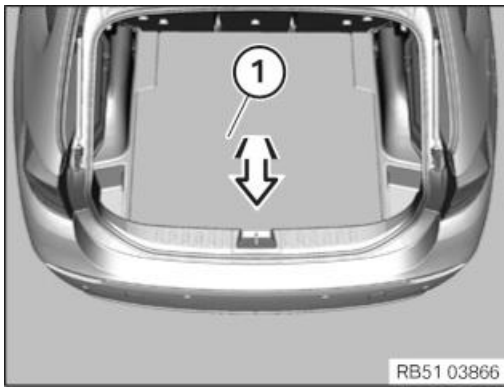
M6			5 Nm
----	--	--	------

21 – Installing the spare wheel well trim panel



- Install the trim panel of the luggage compartment well (1).

22 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1) in the direction of the arrow.

23 – Charging battery



TECHNICAL INFORMATION

Observe the notes on handling the vehicle battery.

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)

► Charging lead-acid batteries and AGM batteries

- Connect to a charger approved by BMW.
- If the battery is charged while it is still installed: always connect the charger to the jump start terminal point in the engine compartment.
- Fully charge the battery.

The battery is fully loaded once the charge current drops below a certain value:

Battery temperature	Charge current
15° C - 25° C	<2.5 A
< 15° C	<1.5 A

- Disconnect the charger after having completed charging.

► Charging the lithium ion battery



TECHNICAL INFORMATION

Comply with notes on handling lithium ion batteries.

For more information see:

08 08 14 (094) Charging parameters for lithium ion batteries

61 12 ... Notes regarding intelligent battery electronics (lithium ion battery)

- Adapt the charging voltage on the charger to the lithium ion batteries.
Too high charging voltage can lead to opening of the electronic disconnect switch.
- Connect to a charger approved by BMW.
- Fully charge the battery.
- Disconnect the charger after having completed charging.

24 – Check/add transmission oil level (GA8HP45Z, GA8HP50Z, GA8HP70Z, GA8HP75Z, GAHP90Z)



RISK OF DAMAGE

Damage to the transmission.

Damage to the transmission through unapproved transmission oil.

- Use only the approved transmission oil.
- After completion of repair work, check transmission oil level.



TECHNICAL INFORMATION

To set the correct oil level, it is mandatory that the service function "Transmission control unit: Oil-level adjustment" is carried out with the diagnosis system.

- Start the oil-level adjustment with the help of diagnosis system only when the transmission oil temperature lies between 30°C and 40°C.
The oil-level adjustment with the diagnosis system can only be successfully terminated if the transmission oil temperature is between 40°C and 50°C.
- Connect the diagnosis system to the vehicle.
- Call up the service function: Transmission control unit: Oil-level adjustment.
- Follow the instructions in the diagnosis system and run an oil-level adjustment.
- **If applicable, top up the oil level in the automatic transmission:**

► Top up automatic transmission fluid



CAUTION

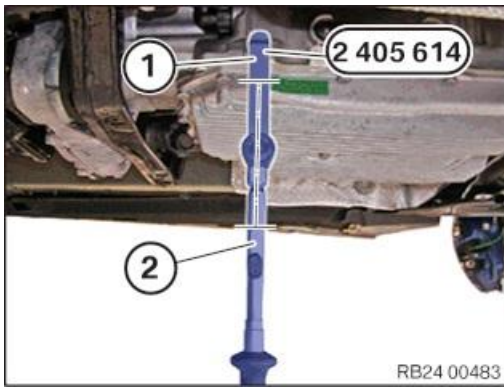
Materials harmful to health.

Contact with fluids harmful to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.



- Stand vehicle on a level surface and secure against rolling off.
- Loosen the oil filler plug (1) using the special tool **2 405 614**.
- Top up automatic transmission fluid according to the instructions in the diagnosis system.



- Renew the oil filler plug and the sealing ring.
Parts: Oil filler plug, sealing ring
 - Position the oil filler plug by hand.
 - Align special tool **2 405 614** (1) and the torque wrench (2) in a line.
 - Tighten the oil filler plug to the **calculated torque to be set**.
- The calculation of the torque to be set is as follows:



TECHNICAL INFORMATION

If an extension is used on the torque wrench, then the torque to be set and the specified tightening torque differ. The torque to be set on the torque wrench must be calculated before tightening.

- Recalculate the torque prior to tightening when using special tool **2 405 614**:
- Measure the length (L1).

(L1) represents the length from the centre of the handle to the square connector of the reversible ratchet.

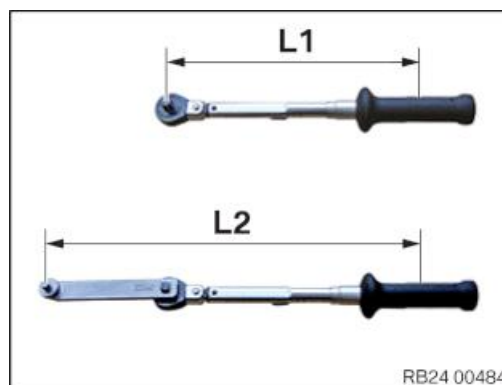
- Measure the length (L2).

(L2) represents the length from the centre of the handle to the square connector of special tool **2 405 614**.

- Calculate the torque to be set using the following calculation: (tightening torque * (L1)) : (L2) = torque to be set

Oil filler plug (GA6HP and GA8HP)

M18	The torque to be set deviates from the specified tightening torque due to the special tool. The torque to be set must be calculated depending on the used torque.	Tightening torque	35 Nm
		Torque to be set	Torque to be set=(35 Nm * L1) : L2



- Connect diagnosis system.
- Switch the ignition on.
- Carry out vehicle identification.
- Carry out a vehicle test.
- Wait for the vehicle test to complete.
- Check identified faults and (if necessary) rectify these faults after consulting with customer.

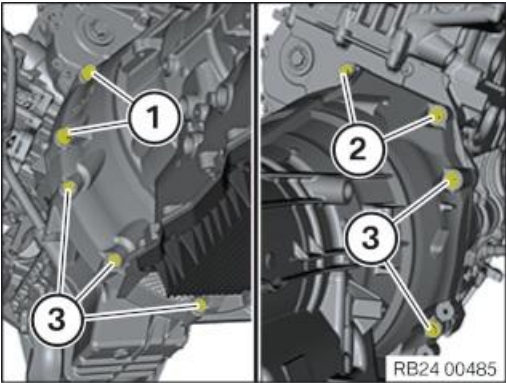
Additional Information

Overview of Tightening Torques

Transmission to engine

Used in step 12

Screw (3) M12x100			66 Nm
Bolt (2) M12x75			66 Nm
Bolt (1) M8x50			19 Nm



Holder on the transmission

Used in step 12

		19 Nm
--	--	-------

Torque converter on the drive plate

Used in step 12

M10	Renew screws.	56 Nm
-----	---------------	-------

Transmission oil cooler line to transmission

Used in step 12

M8		8 Nm
----	--	------

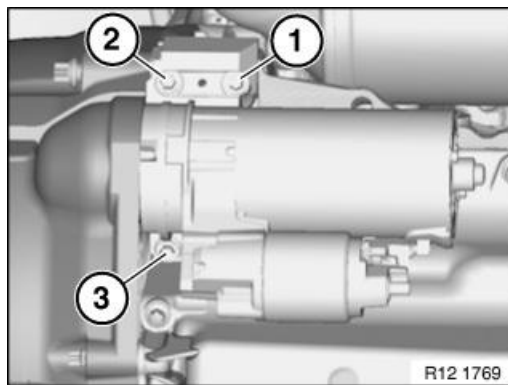
Holder on the diesel particulate filter

Used in step 12

		21 Nm
--	--	-------

Starter motorUsed in step [13](#)

M8x60	Tighten screws in the following sequence (1), (2), (3).	19 Nm
-------	---	-------

**Battery positive lead to starter**Used in step [13](#)

M8		13,4 Nm
----	--	---------

Wiring harness to starter (terminal 50)Used in step [13](#)

M6		7 Nm
----	--	------

Rear silencer to bodyUsed in step [15](#)

M8		21 Nm
----	--	-------

Exhaust system bracketUsed in step [15](#)

M12x20		30 Nm
--------	--	-------

Diesel particulate filter / primary catalytic converter to exhaust systemUsed in step [15](#)

M8	Renew flat band clip.	26 Nm
M10	Renew flat band clip.	43 Nm

Reinforcement plate to bodyUsed in step [16](#)

		19 Nm
--	--	-------

Tension strut to bodyUsed in step [16](#)

M8		24 Nm
----	--	-------

Tension strut to compression strutUsed in step [16](#)

Renew screws.

M12		Jointing torque	100 Nm
		Angle of rotation	90 °

Trailing link to rear axleUsed in step [16](#)

M10		50 Nm
-----	--	-------

Pedestrian protection to front axle supportUsed in step [17](#)

		25 Nm
--	--	-------

Underbody panelling on bodyUsed in step [18](#) [19](#)

Screw not metric			3 Nm
Screw M6			8.8 Nm
Nut			2.5 Nm

Battery earth lead to battery

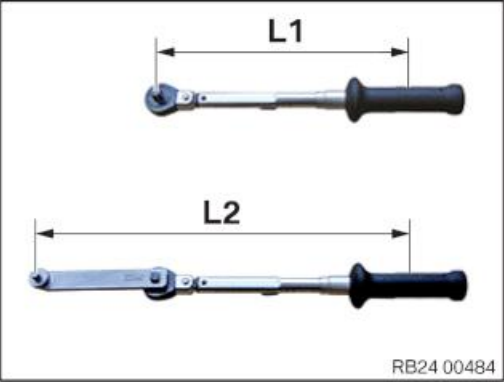
Used in step 20

M6			5 Nm
----	--	--	------

Oil filler plug (GA6HP and GA8HP)

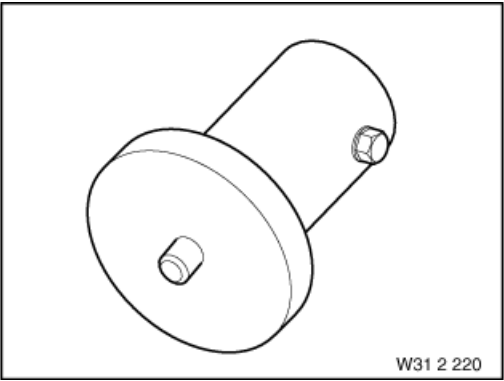
Used in step 24

M18	The torque to be set deviates from the specified tightening torque due to the special tool. The torque to be set must be calculated depending on the used torque.	Tightening torque	35 Nm
		Torque to be set	Torque to be set= (35 Nm * L1) : L2



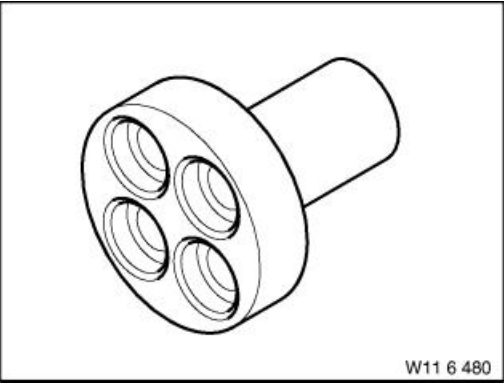
Overview of Special Tools

0 491 932 (31 2 220) Upholstery



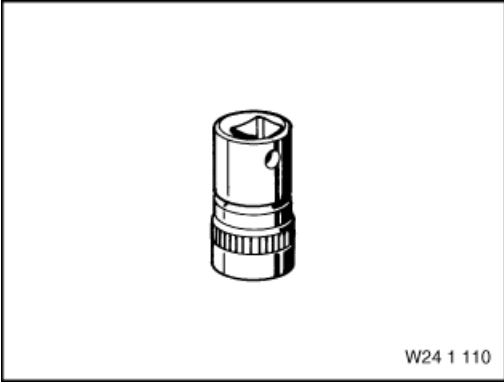
Common		Used in step 8
Usage	(Support) For supporting the front axle support and the exhaust system during installation work	
Included in the tool or work		
Storage location	B3	
Replaced by		
In connection with		
SI-Number	01 06 94 (801)	

0 493 380 (11 6 480) Connector



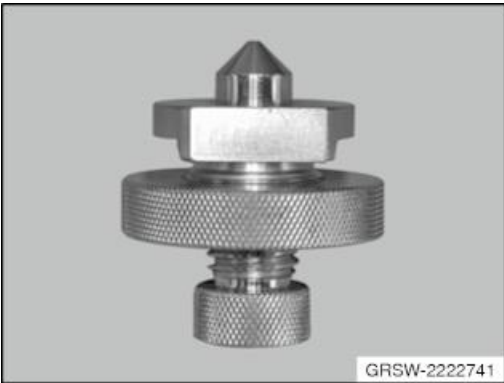
Common		Used in step 11 12
Usage	For turning over engine at crankshaft hub (vibration absorber) when adjusting valve timing	
Included in the tool or work		
Storage location	B2	
Replaced by		
In connection with		
SI-Number	01 11 98 (338)	

0 491 667 (24 1 110) Socket wrench insert



Common		Used in step	11	12
Usage	Loosening and fastening the converter fastener			
Included in the tool or work				
Storage location	A14			
Replaced by				
In connection with				
SI-Number	01 04 86 (566)			

2 222 741 Device

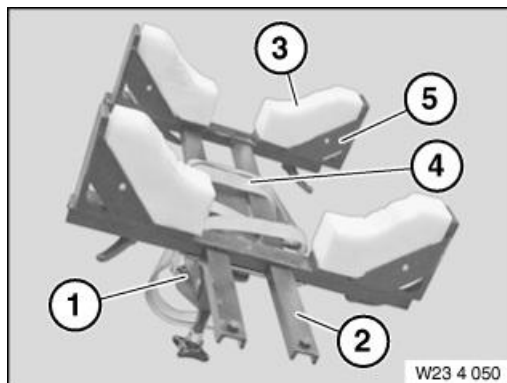


Common		Used in step	11
Usage	To secure the converter when removing and installing the transmission.		
Included in the tool or work			
Storage location	B30		
Replaced by			
In connection with			
SI-Number	01 27 11 (764)		

0 494 213 (24 2 390) Cap



Common		Used in step	11	12
Usage	(protective cap) For sealing off the guide sleeve of the transmission connector			
Included in the tool or work				
Storage location	C49			
Replaced by				
In connection with				
SI-Number	01 14 01 (766)			



Common

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

Consisting of

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

2 219 012 Hydraulic lifter



Common		Used in step 11
Usage	For raising and lowering various vehicle components.	
Included in the tool or work		
Storage location		
Replaced by		
In connection with		
SI-Number	01 05 90 (207)	

2 405 614 Socket wrench



Common		Used in step 24
Usage	For opening and closing the oil filler plug. Contour-graphic silhouette foil is included in delivery specification. Further information on the contour-graphic silhouette foil can be found in service information 00 22 13 (969). Replaced by 2455997	
Included in the tool or work		
Storage location		
Replaced by		
In connection with		
SI-Number	01 33 15 (305)	

Links

General repair instructions	Used in step
12 00 ... Notes for disconnecting and connecting battery	3
61 00 ... Safety information for handling vehicle battery	3
61 12 ... Notes on intelligent battery sensor (IBS)	3 23
61 20 ... Notes on AGM battery	23
61 20 ... Notes regarding the lithium ion battery	23

Repair instructions	Used in step
24 34 ... Notes on mechatronics (GA8HP45Z,GA8HP70Z,GA8HP90Z)	11 12
23 .. Universal BMW transmission support	11 12

Operating materials	Used in step
14.0 Automatic transmission fluid for ZF transmissions GA8HP45Z / GA8HP70Z / GA8HP90Z / GA8P70H / GA8P75H	24

Special tool service information	Used in step
Description of the manual Li parameter setting for DEUTRONIC DBL800/1200/1600	23
Description of the manual Li parameter setting for ELEKTRON HS-1000	23
Description of the manual Li parameter setting for ELTEK MultiCharger 750/900/1500	23

Special tool service information	Used in step
Charging parameters for lithium ion batteries	23
Note for the workshop equipment catalogue BMW, MINI	23

24 00 030 Removing and installing automatic transmission (6HP19Z) N47,N47S All-wheel drive



Special tools required:

- [00 2 030](#)
- [11 6 480](#)
- [23 4 050](#)
- [24 1 110](#)
- [24 1 370](#)
- [24 2 390](#)



Important!

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.



Important!

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

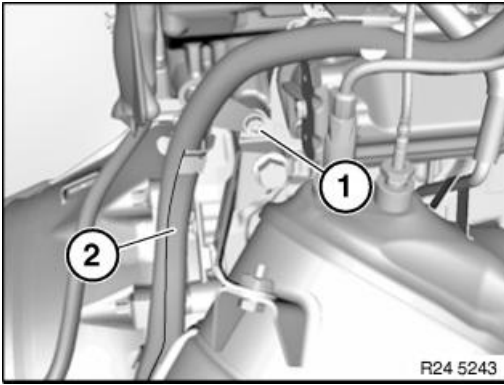
[Use only the approved transmission oil.](#)

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

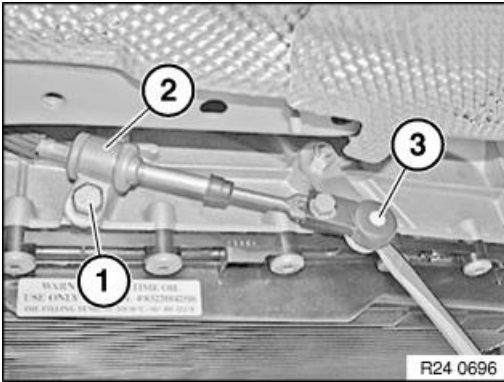


Necessary preliminary work:

- Clamp off [battery](#)
- Remove engine acoustic cover
- Remove [lower pedestrian protection](#)
- Remove [rear underbody protection](#)
- Remove the holder for rear underbody protection
- Remove [front propeller shaft](#)
- Remove [starter motor](#)
- [Remove](#) propeller shaft from transmission.
- Release centre mount.
- **Note:**
- 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.



Undo screw (1) from cable clip (2).



Move selector lever to "P" position.

Release screw (1).

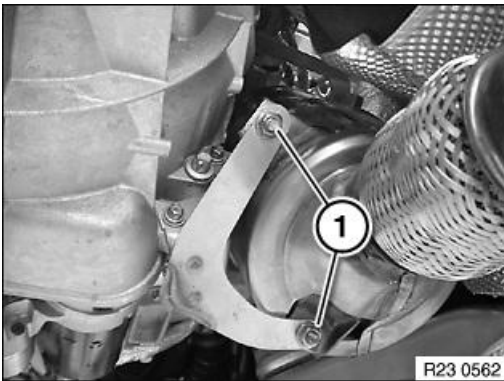
Tightening torque [25 16 2AZ](#).

Remove clamping bracket (2).

Release shift cable head (3) using a screwdriver from ball head of shift cable lever.

Installation note:

[Adjust selector lever](#).

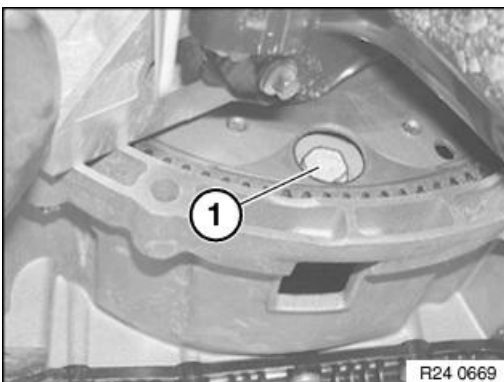


Unscrew nuts (1).

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

Release screws from bracket on transmission.

Bracket remove.

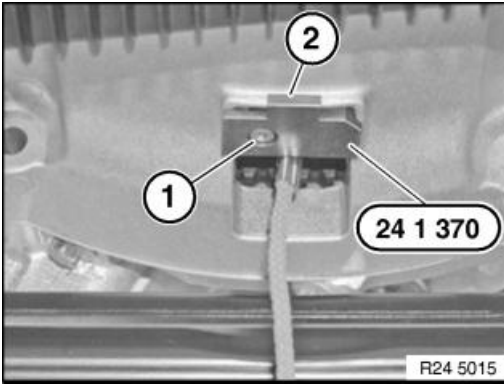


Crank engine with special tool [11 6 480](#) at vibration damper in direction of rotation.

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

Crank engine further and release remaining 5 bolts.

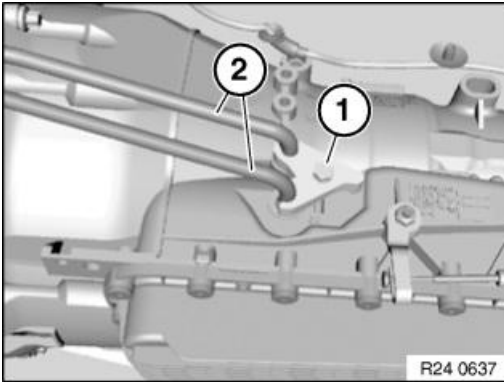
Tightening torque [24 40 1AZ](#).



Insert special tool [24 1 370](#) into recess of transmission housing and secure with screw (1). *Note:*

Note installation position.

Lug (2) must point in opposite direction to direction of travel.

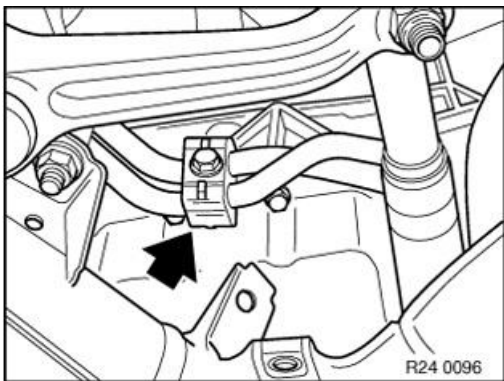


Release screw (1).

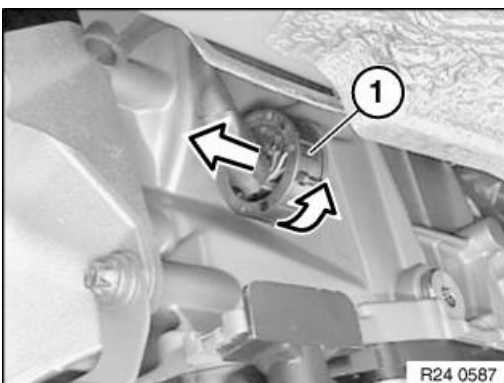
Disconnect hydraulic lines (2) to transmission oil cooler.

Installation note:

Replace sealing rings.



Detach holder from transmission oil lines on oil sump.



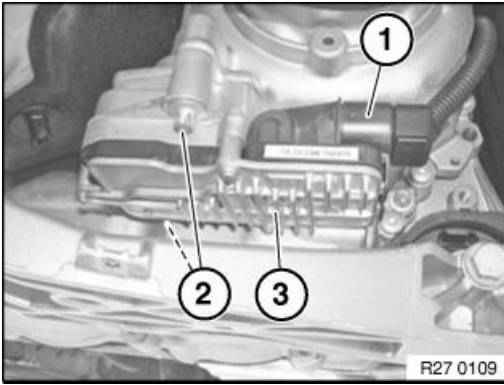
- Unlock connector (1) by turning and disconnect
- Do not touch pins
- Release cable from brackets
- Insert special tool [24 2 390](#) in sealing cup.

Repair work is described in

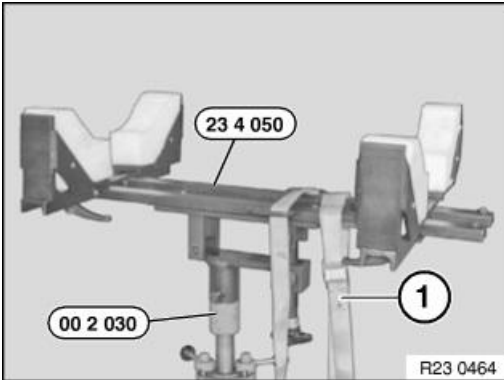
[Notes on mechatronics](#)

Important!

Read and comply with important note.



Disconnect the connector (1) from the transfer box-control unit (longitudinal torque distribution) (3).



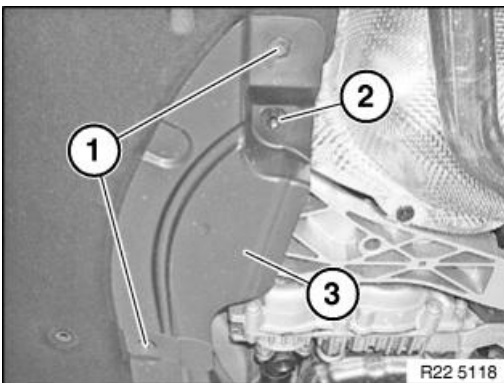
Supporting transmission:

Support transmission with special tools [23 4 050](#) , [00 2 030](#) .

Secure transmission to mounting with tensioning strap (1).

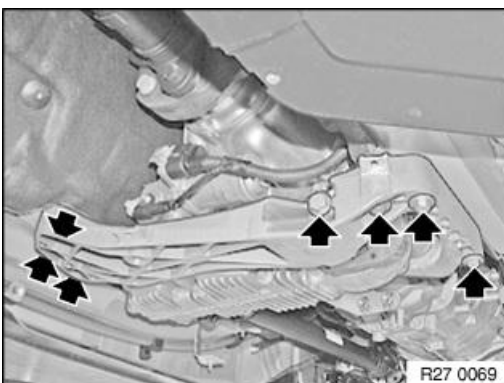
Tasks are described in [gearbox holder](#).

After completion of work, check transmission fluid level.



Release screws (1) and nuts (2).

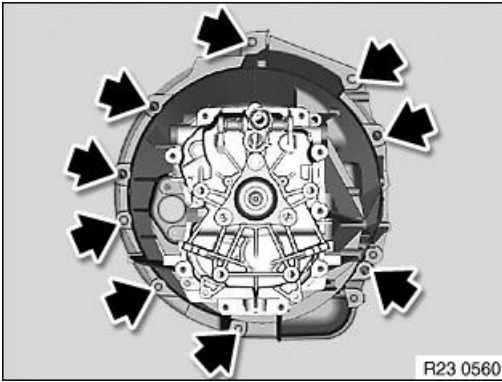
Remove trim (3).



Loosen screws.

Remove transmission cross member.

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

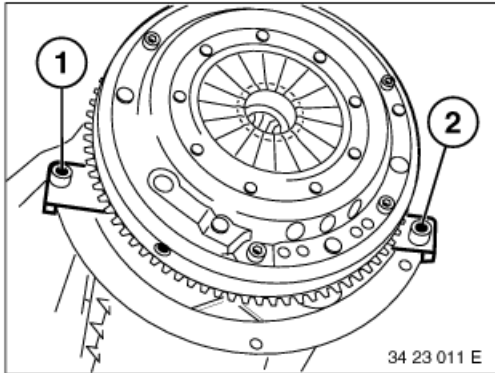


Release bolts and remove transmission.

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

Note:

Graphic similar.



Installation note:

Bore hole of the drive plate must be accessible from recess to the oil sump.

Check fitting sleeves (1 and 2) for correct fit.

Replace damaged fitting sleeves.



Installation note:

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

Flange automatic transmission to engine.



Special tools required:

- [11 6 480](#)
- [24 1 110](#)
- [2 222 741](#)
- [24 1 370](#)
- [24 2 390](#)
- [23 4 050](#)
- [00 2 030](#)



Important!

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.



Important!

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 automatic transmission!

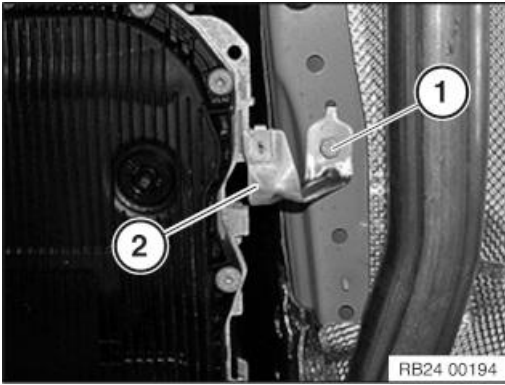


Necessary preliminary tasks:

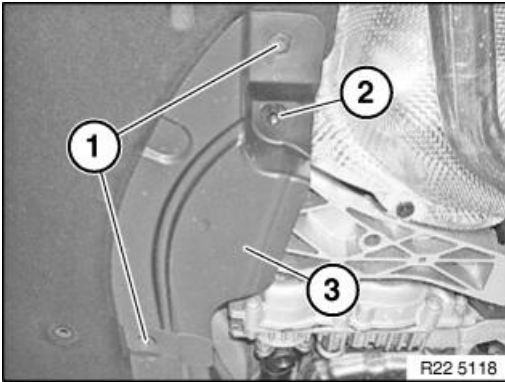
- Clamp off [battery](#).
- Remove [bottom pedestrian protection](#).
- Remove [rear underbody protection](#).
- Remove [starter](#).
- Remove [exhaust system](#).
- Remove heat shields.
- Remove [front propeller shaft](#).
- Partially remove [propeller shaft](#).
 - Disconnect propeller shaft at transmission.
 - Release centre mount.
 - Tie up propeller shaft to underbody.

Note:

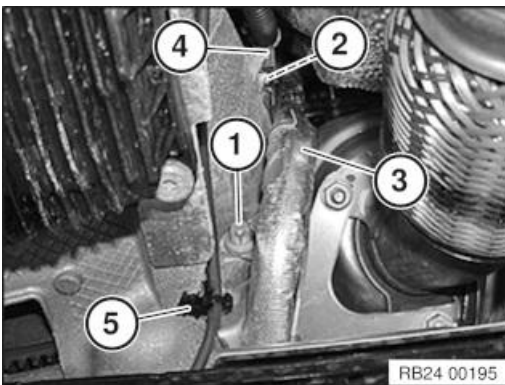
Bending the propeller shaft by an excessive angle can cause premature damage to the joint/propeller shaft!



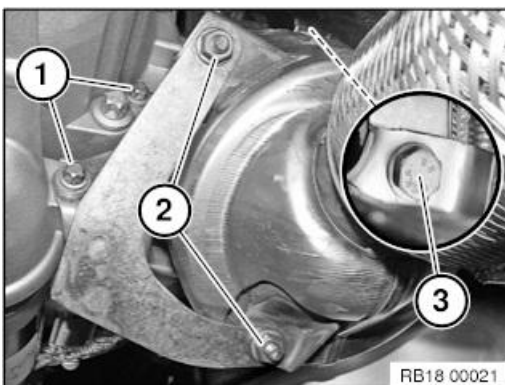
Release screw (1).
Take off holder (2).



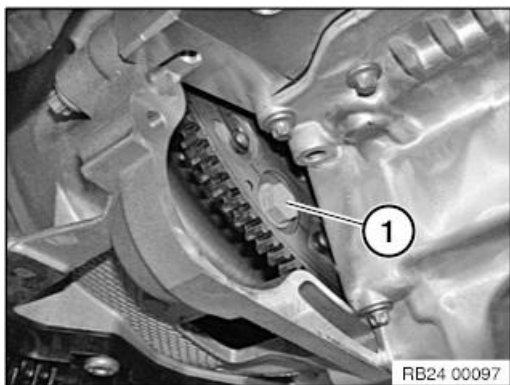
Release screws (1) and nuts (2).
Remove trim (3).



Release screws (1) and (2).
Tightening torque [24 00 1AZ](#).
Release positive wire (3) from holder.
Release cable clips (4) and (5).



Unscrew nuts (2).
Tightening torque [18 20 1AZ](#).
Release screws (1).
Tightening torque [24 00 1AZ](#).
Take off holder.



Crank engine at vibration damper with special tool [11 6 480](#) in direction of rotation until bolt (1) is visible in recess.

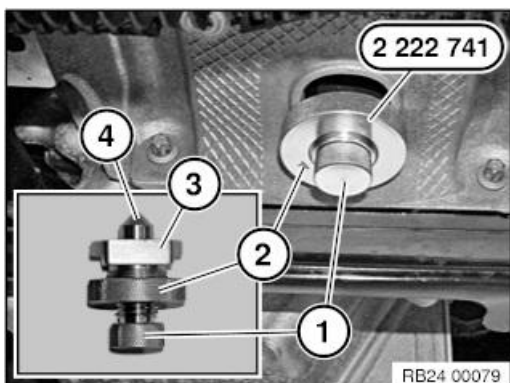
Release 4 converter screws (1) with special tool [24 1 110](#).

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

Installation note:

Renew converter screws.

Remove any remaining adhesive residue from the thread.



Unscrew knurled screw (1) from special tool [2 222 741](#) (do not remove completely) before inserting in the recess of the transmission housing.

Insert special tool [24 1 370](#) and shaped element (3) in the recess.

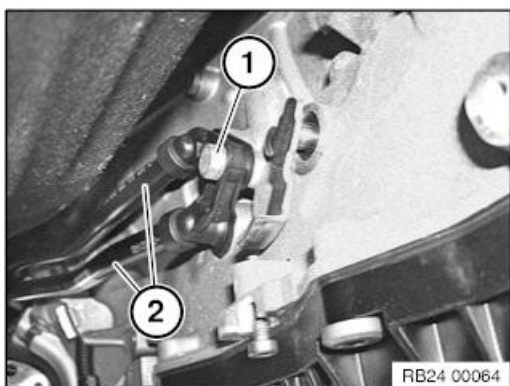
Slightly tighten knurled nut (2).

Screw in knurled screw (1) fully.

- Locating pin (4) must be located between converter and engine.

Move special tool [2 222 741](#) in the recess until the locating pin (4) rests against the converter.

Use knurled nut (2) to fix special tool [2 222 741](#) and converter in position.



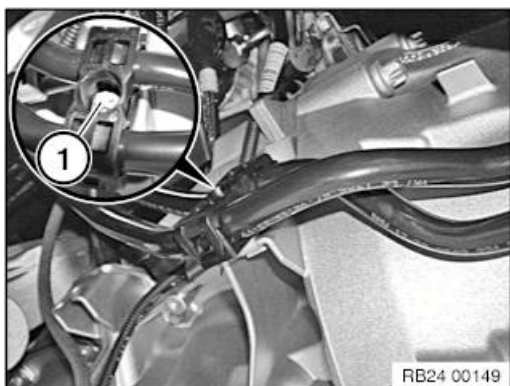
Release screw (1).

Disconnect hydraulic lines (2) to transmission oil cooler.

Tightening torque [17 22 1AZ](#).

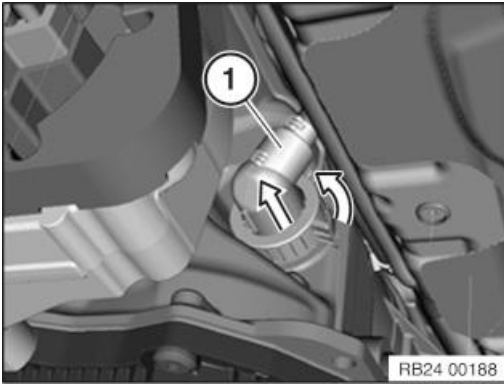
Installation note:

Replace sealing rings.



Release screw (1).

Tightening torque [17 22 2AZ](#).



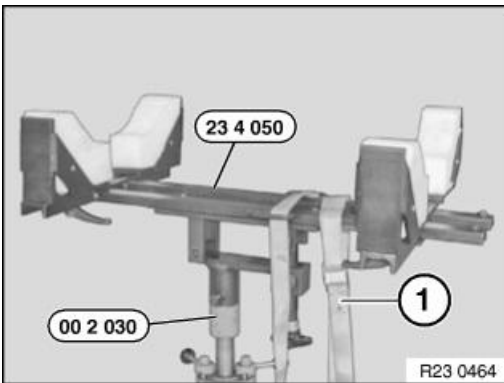
- Unlock and disconnect connector (1) by turning.
 - Do not touch pins!
- Insert special tool [24 2 390](#) in sealing cup.
- Release cable of transmission connector and starter from brackets.

Tasks are described in Gearbox holder.

[Notes on mechatronics](#)

Important!

Read and comply with important note.

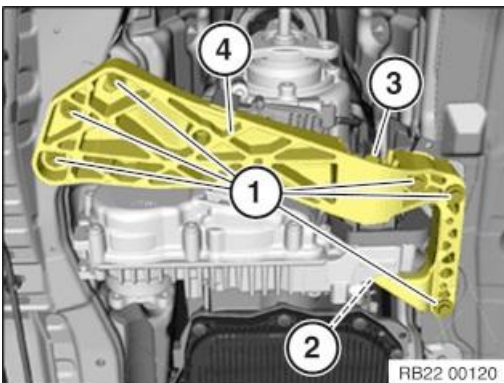


Supporting transmission:

Support transmission with special tools [23 4 050](#) , [00 2 030](#) .

Secure transmission to mounting with tensioning strap (1).

Tasks are described in [Transmission bracket](#).



Slacken nut (2).

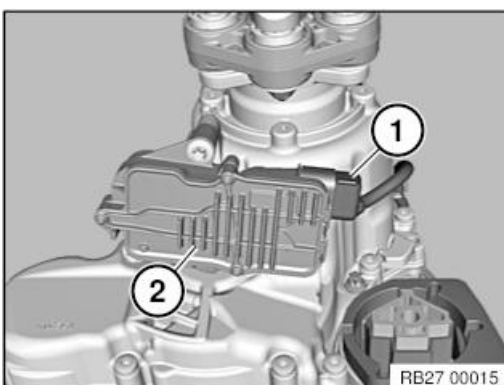
Tightening torque [22 32 5AZ](#).

Remove bolt (3).

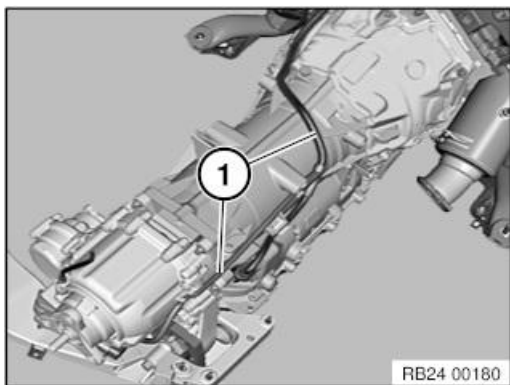
Release screws (1).

Tightening torque [22 32 4AZ](#).

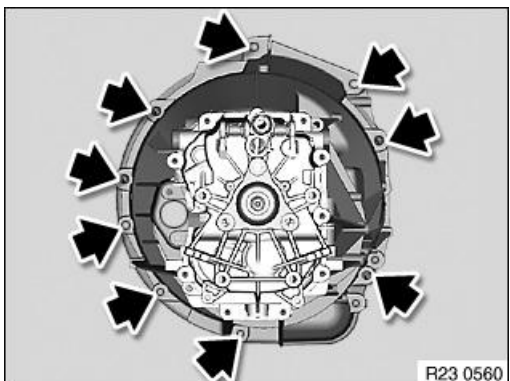
Remove gearbox cross member (4).



Release connector (1) from longitudinal torque model (2).



Release wiring harness (1) from transmission.

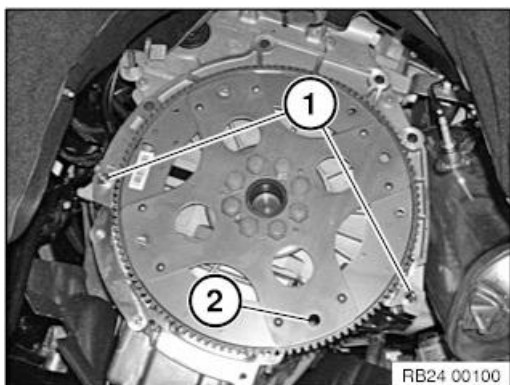


Release bolts and remove transmission.

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

Note:

Note installation locations of screws. Bolts have different lengths.



Installation note:

Check that fitting sleeves (1) are correctly seated.

Replace damaged fitting sleeves (1).

Bore hole (2) in drive plate must be accessible from recess on engine oil sump.

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

Flange automatic transmission to engine.

00 Risk of injury if oil comes into contact with eyes and skin



Danger of injury!

Contact with eyes or skin may result in injury!

Possible symptoms are:

- Impaired sight
- Irritation of the eyes
- Reddening of the skin
- Rough and cracked skin



Protective measures/rules of conduct:

- Wear protective goggles
- Wear oil-resistant protective gloves
- Observe country-specific safety regulations



First aid measures:

- Eye contact: Rinse eyes immediately with plenty of water for at least 15 minutes; if available, use an eye-rinsing bottle. If irritation of the eyes persists, consult a doctor.
- Skin contact: Wash off with soap and water immediately. If irritation persists, consult a doctor.

Note: Do not use solvents/thinners.

00 Safety instructions for handling oil



Warning!

[Danger of poisoning](#) if oil is ingested/absorbed through the skin!

[Risk of injury](#) if oil comes into contact with eyes and skin!



Recycling:

Observe country-specific waste-disposal regulations.



Measures if oil is unintentionally released:

- Personal precautionary measures: Danger of slipping! Keep non-involved persons away from the work area. Wear personal protective clothing/equipment.
- Environmental protection measures: Prevent oil from draining into drain channels, sewerage systems, pits, cellars, water and the ground.
- Limiting spread: Use oil blocks to prevent the surface spread of oil.
- Cleaning procedure: Bind and dispose of escaped oil with nonflammable absorbents.

Note: Do not flush oil away with water or aqueous cleaning agents.

23 Transmission designations

Breakdown of BMW designation:

A5S 300J (former designation)		
A	Transmission type	- S = Manual gearbox - A = Automatic transmission
5	Number of forward gears	
S	Type of top gear	- D = Direct gear - S = Overdrive gear
300	Max. input torque (Nm)	
J	Code letter of transmission manufacturer	- G = Getrag - J = Jatco - R = GMPT (General Motors Powertrain) - Z = ZF (Zahnradfabrik Friedrichshafen)
SMG	Notes	SMG = Sequential M gearbox/transmission

GS6-37BZ (new designation according to BMW Group Standard GS 90007)		
G	Transmission	
S	Transmission type	- S = Manual gearbox - A = Automatic transmission
6	Number of forward gears	
-		- = Standard with manual gearshift - HP = Hydraulic planetary gear - DKG= twin-clutch gearbox
37	Transmission type	26 = D-transmission 31 = C-transmission 39 = F-transmission 37 = H-transmission 53 = G-transmission 17 = I-transmission 47= J transmission SMG -7-speed 45 = K transmission 36= Transmission DKG
B	Gear set	- B = Petrol gear ratio - D = Diesel gear ratio - S= Sport gear ratio

Z	Code letter of transmission manufacturer	- G = Getrag - Z = ZF (Zahnradfabrik Friedrichshafen) - A = AISIN
---	--	---

Manual gearbox:

BMW designation	Manufacturer	Manufacturer designation	Remarks
S5D 200G	Getrag	B transmission (220/5)	
S5D 200G	Getrag	B transmission (221/5)	for M41 engine only
S5D 250G	Getrag	B transmission (220/5)	Reinforced version
S5D 260Z	ZF	C-transmission (S5-31 D)	for M51 engine only
S5D 280Z	ZF	C-transmission (S5-31)	
S5D 310Z	ZF	C-transmission (S5-31)	up to 9.95
S5D 320Z	ZF	C-transmission (S5-31)	from 9.95 (reinforced version)
GS5S31BZ (SMG)	ZF	C transmission	SMG
GS5-39DZ	ZF	F transmission	
S6S 420G	Getrag	D-transmission (226/6)	
S6S 420G (SMG)	Getrag	D transmission	SMG
S6S 560G	Getrag	E-transmission (286/6)	
GS6-37BZ	ZF	H-transmission	
GS6S37BZ (SMG)	ZF	H-transmission	
GS6-37DZ	ZF	H-transmission	
GS6-37BG	Getrag	H-transmission	
GS6-53BZ	ZF	G-transmission	
GS6-53DZ	ZF	G-transmission	
GS6-17BG	Getrag	I-transmission	
GS6-17DG	Getrag	I-transmission	
GS7S47BG (SMG)	Getrag	J-transmission (247)	SMG -7-gear
GS7D36SG	Getrag	DKG (436)	DKG -7-gear
GS6- 45BZ	ZF	K transmission	
GS6- 45DZ	ZF	K transmission	
GS6-60DA/BA	AISIN	BG6	

7DCT300	Getrag	7DCT	DKG -7-gear
GS6-58DG/BG	Getrag		
GS6-59DG/BG	Getrag		

Automatic transmission:

BMW designation	Manufacturer	Manufacturer designation	Remarks
A4S 200R	General Motors Powertrain	GM4	
A4S 270R	General Motors Powertrain	THM-R1w	Transmission wide-stepped
A4S 310R	General Motors Powertrain	THM-R1	
A5S 300J	Jatco	Jatco	
A5S 310Z	ZF	5HP-18	
A5S 325Z	ZF	5HP-19	
A5S 440Z	ZF	5HP-24	
A5S 560Z	ZF	5HP-30	
A5S 360R / 390R	GM	GM5	
GA6F21AW	AISIN	GA6F21AW	
GA6HP19Z	ZF	6HP19	
GA6HP26Z	ZF	6HP26	
GA6HP32Z	ZF	6HP32	
GA6L45R	GM	GM6	
GA6F21AW	AISIN	GA6F21AW	
GA8F22AW	AISIN	GA8F22AW	
GA8G45	AISIN	8G45	
GA8HP45Z	ZF	8HP45	
GA8HP50Z	ZF	8HP50	
GA8HP51Z	ZF	8HP51	
GA8HP70Z	ZF	8HP70	
GA8HP75Z	ZF	8HP75	
GA8HP76Z	ZF	8HP76	
GA8P70H	ZF	8P70	Hybrid
GA8P75H	ZF	8P75	Hybrid
GA8HP90Z	ZF	8HP90	
GA8HP95Z	ZF	8HP95	

GA7AHSCD	Daimler	AHS-C	Hybrid
----------	---------	-------	--------

23 ... Universal BMW transmission take-up



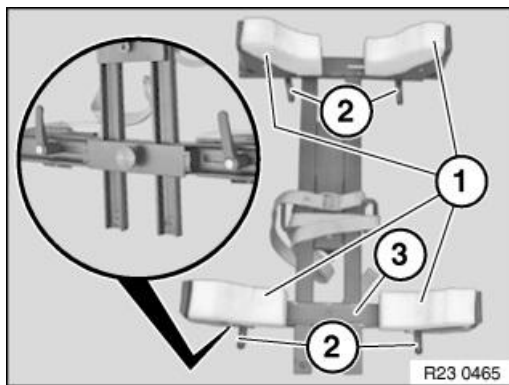
Special tools required:

- [00 2 030](#)
- [23 4 050](#)



Note:

- The universal transmission bracket is introduced for the E60 AWD
- Suitable for manual and automatic transmissions

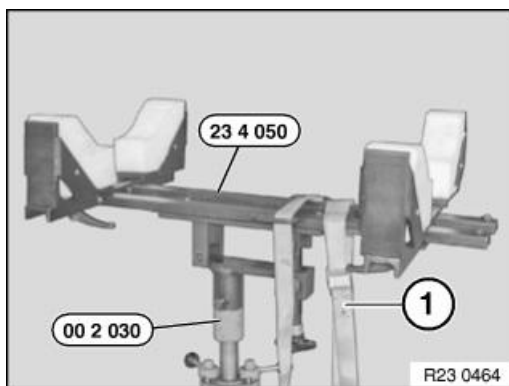


Important!

Front and rear supports (1) can be laterally adjusted by means of screws (2).

Carrier (3) of rear supports (1) can be longitudinally adjusted by means of screw.

Supports must be adapted in length and width to the transmission.



Supporting transmission:

Support transmission with special tools [23 4 050](#) , [00 2 030](#) .

Important!

Transmission must be secured with tensioning strap (1).

23 Universal transmission retaining bridge



Special tools required:

- 0 495 187
- [24 0 200](#)



Note:

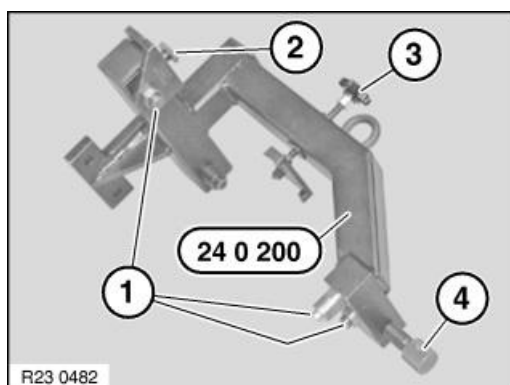
- Transmission retaining bridge [24 0 200](#) is suitable for manual and automatic transmissions



Attention!

The adapter and shaft must be adapted to positively lock with the transmission.

(Danger of injury)



Adapt the adapter (1) and spindle with the thrust piece (3) on the transmission.

Adjust the length using the sliding piece (2).

Screw in spindle (4).

Attention!

Before mounting on assembly stand 0 495 187 check retraining bridge for tight fit.

24 11 011 Removing and installing/sealing or replacing transmission oil sump (GA6HP19Z)



Important!

- Do not let skin come in contact with transmission oil and do not inhale fuel vapours.
- Wear protective gloves.
- Ensure adequate ventilation.



Important!

Remove transmission oil sump only after it has cooled down.

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

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

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



Recycling:

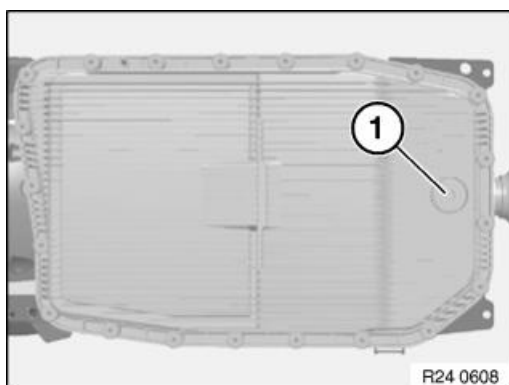
Catch and dispose of escaping automatic transmission fluid.

Observe country-specific waste disposal regulations.



Necessary preliminary tasks:

[Remove](#) rear underbody protection



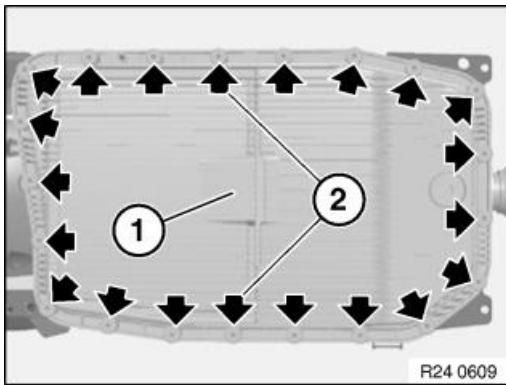
Remove oil drain plug (1).

Tightening torque: [24 11 6AZ](#).

Drain automatic transmission oil.

Installation note:

Replace oil drain plug.



Unscrew all bolts.

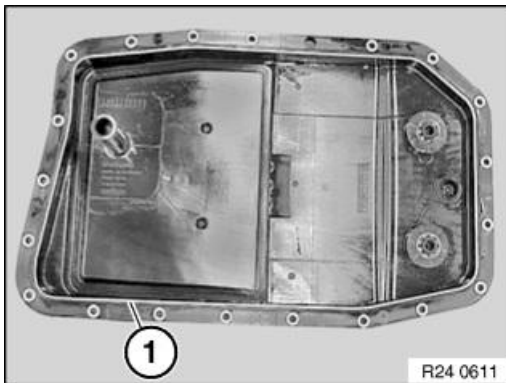
Remove transmission oil sump (1).

Installation note:

Insert screws (2) until screw heads make contact.

Insert all further screws in diagonal sequence from inside to outside until screw heads make contact.

Tightening torque: [24 11 5AZ](#).



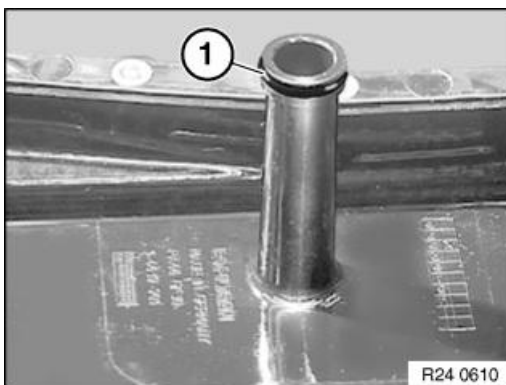
Remove gasket (1) from transmission sump.

Clean sealing faces and groove with a cloth.

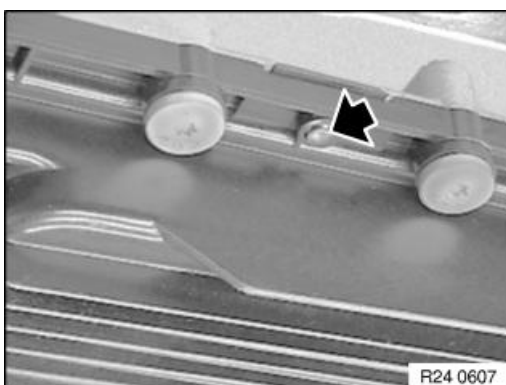
Insert new gasket in transmission oil sump groove.

Important!

Do **not** degrease transmission oil sump with cleaning agent.



Replace sealing ring (1) on oil filter tube.



Installation note:

The gasket is correctly installed when it is engaged in the locating opening of the transmission oil sump.

24 11 014 Removing and installing/sealing or replacing transmission oil sump (GA8HP45Z)



Important!

- Do not let skin come in contact with transmission oil and do not inhale fuel vapours.
- Wear protective gloves.
- Ensure adequate ventilation.



Important!

Remove transmission oil sump only after it has cooled down.

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 automatic transmission!

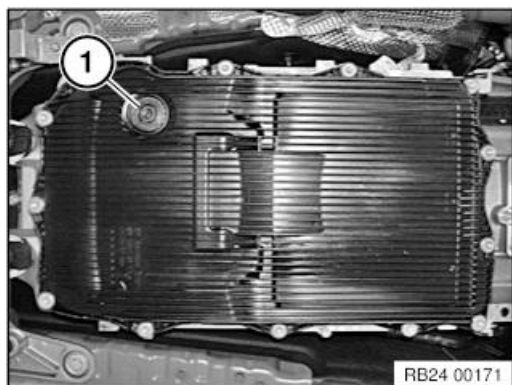
Installation note:

The transmission oil sump must be renewed **every** time it is removed.



Necessary preliminary tasks:

- Remove rear [underbody protection](#).



Remove oil drain plug (1).

Tightening torque [24 11 2AZ](#).

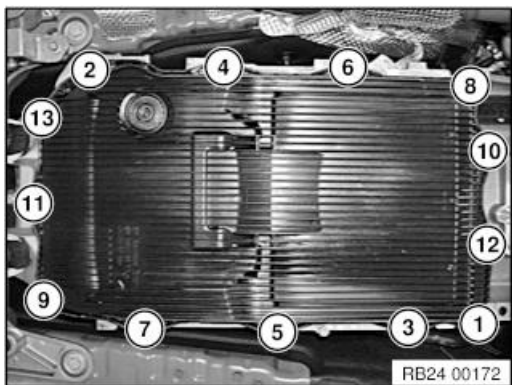
Drain automatic transmission oil.



Recycling:

Catch and dispose of escaping transmission oil.

Observe country-specific waste disposal regulations.



Unscrew all bolts.

Remove and renew transmission oil sump.

Clean the contact surface of the transmission oil sump on the transmission.

Installation note:

Replace screws 1...13.

Insert new screws until screw heads make contact.

Fasten screws in sequence 1...13 to specified torque.

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

**Special tools required:**

- [00 2 300](#)
- [13 5 250](#)
- [24 0 200](#)
- [24 1 420](#)
- [24 2 410](#)
- [24 1 410](#)

**Important!**

- Do not let skin come in contact with transmission oil and do not inhale fuel vapours.
- Wear protective gloves.
- Ensure adequate ventilation.

**Important!**

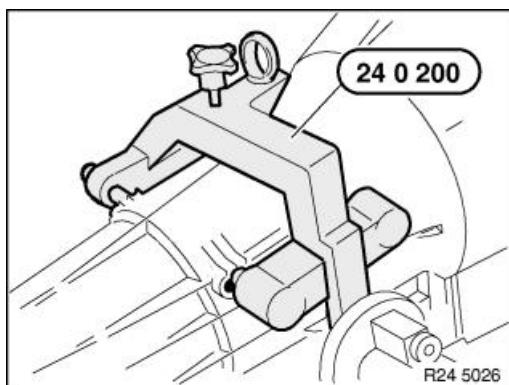
After completion of repair work, check [transmission oil level](#).

Use only approved [transmission oil](#).

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

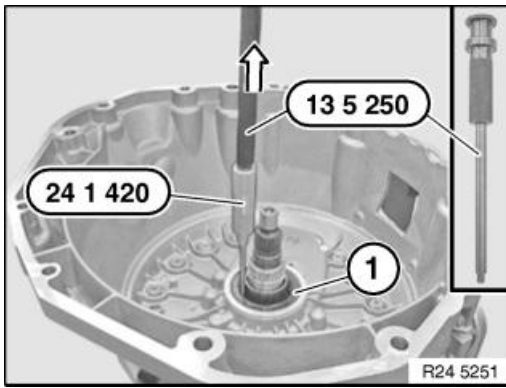
**Necessary preliminary tasks:**

- Remove [torque converter](#).

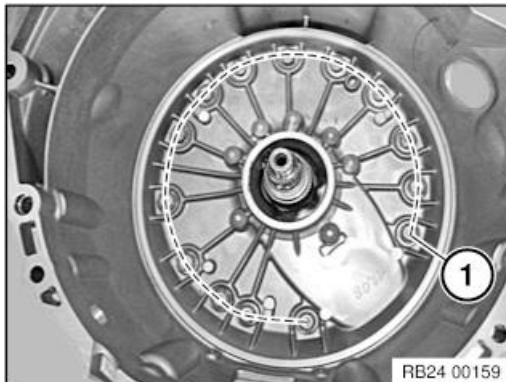


Secure transmission with special tool [24 0 200](#) on assembly stand [00 2 300](#). *Note:*

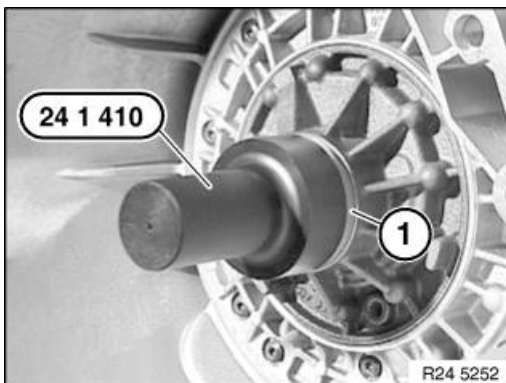
Read and comply with note on installation of [transmission retaining bridge](#).



Pull out radial shaft seal (1) with special tools [24 1 420](#) and [13 5 250](#).



The 14 aluminium torx screws contained in the drive repair kit are furnished with a sealing ring and must be **mandatory** replaced as well. Always only change one screw after the other for screws (1) along the dashed line. Tightening torque [24 30 6AZ](#).



Installation note:

1. Install the O-ring on the drive shaft.
2. Oil sealing lip on shaft seal.
3. Drive in radial shaft seal (1) with special tool [24 1 410](#) as far as it will go.

**Special tools required:**

- [23 0 490](#)
- [24 4 310](#)

**Important!**

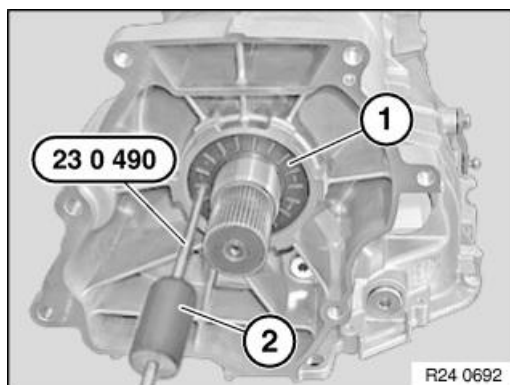
After completion of repair work, check [transmission oil level](#).

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

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

**Necessary preliminary tasks:**

- Remove [transfer box](#)



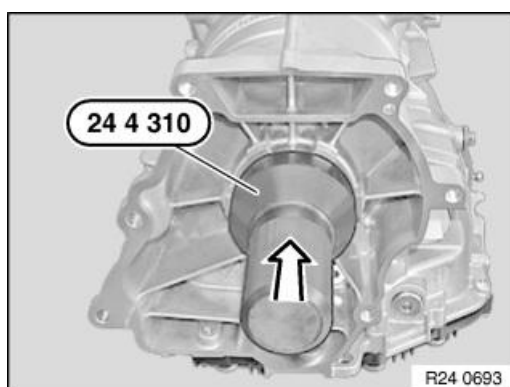
Drive a hole into radial shaft seal (1) using a centre punch.

Important!

Do not use a drill as drillings may result in transmission malfunction.

Thread special tool [23 0 490](#) into radial shaft seal (1).

Drive out radial shaft seal (1) with impact weight (2).

**Installation note:**

Coat sealing lips of new radial shaft seal with clean transmission oil.

Drive shaft seal firmly home with special tool [24 4 310](#).



Special tools required:

- [23 0 490](#)



Important!

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

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

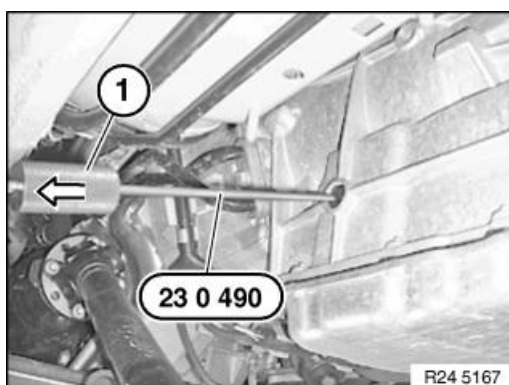
Failure to comply with this requirement will result in serious damage to the automatic transmission!



Necessary preliminary tasks:

- Remove [rear underbody protection](#)
- Remove front propeller shaft at transfer box and tie to one side.

Tasks are described in [removing front propeller shaft](#).



Screw special tool [23 0 490](#) into sealing cap.

Drive out sealing cap using impact weight (1).

Important!

Clean bore hole using a clean cloth and ensure that there is no more oil sticking to it.

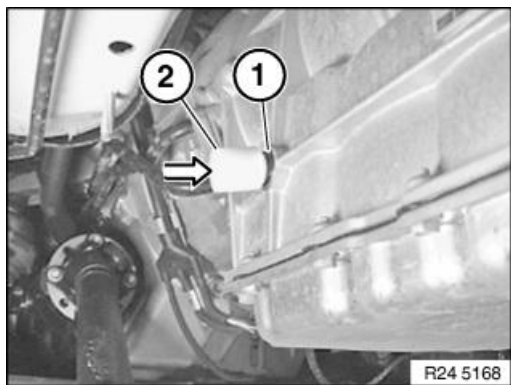


Place new sealing cap (1) on drift (3). **Important!**

Sealing cap (1) must be inserted into transmission housing with sealing lip (2).

Note:

Drift (3) for driving in sealing cap is contained in repair kit.



Drive in new sealing cap (1) to the stop with drift (2).

**Special tools required:**

- [24 5 361](#)
- [24 5 362](#)
- [24 5 364](#)
- [24 5 366](#)

**Important!**

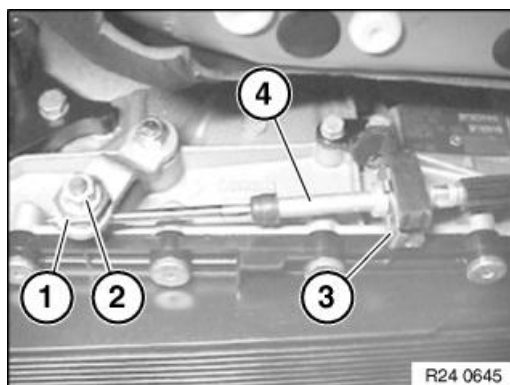
After completion of work, check [transmission oil level](#).

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

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

**Necessary preliminary tasks:**

- Remove heat shields



Note:

Version 1:

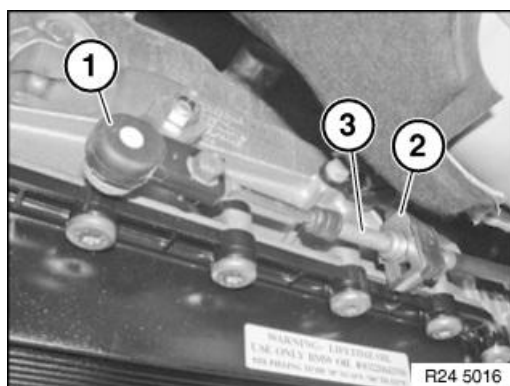
Grip clamping sleeve (1) and slacken nut (2).

Detach retainer (3) downwards using a screwdriver.

Pull cable (4) out of holder.

Installation:

[Adjust gearshift lever](#).



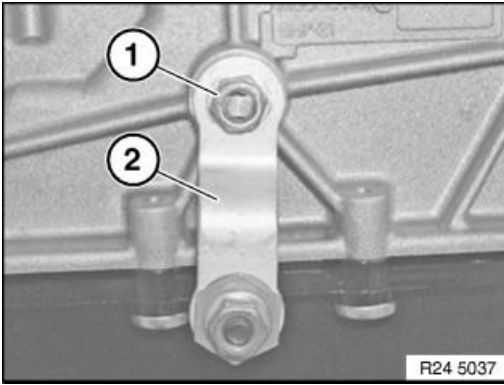
Note:

Version 2:

Release shift cable head (1) from ball head.

Installation:

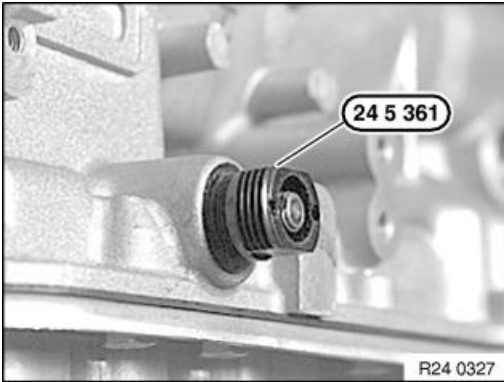
[Adjust selector lever](#).



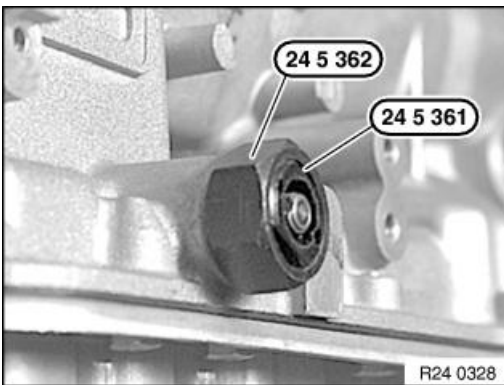
Slacken nut (1).

Take off holder (2).

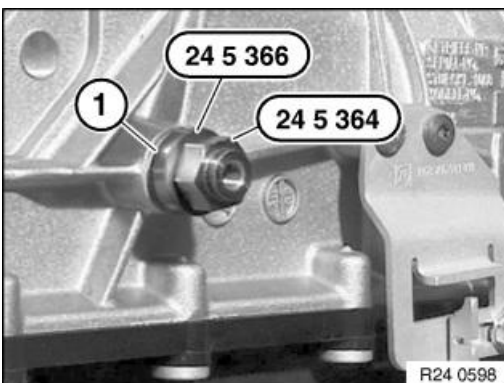
Tightening torque [24 51 1AZ](#).



Screw in special tool [24 5 361](#) until it is firmly connected with radial shaft seal hat.



Screw special tool [24 5 362](#) onto special tool [24 5 361](#) and tighten down.
This pulls the shaft seal out of the transmission housing.



Oil sealing lip on shaft seal (1).

Screw in radial shaft seal (1) with special tools [24 5 366](#) and [24 5 364](#) as far as it will go.

**Special tools required:**

- [24 5 362](#)
- [24 5 366](#)
- [24 5 367](#)

**Important!**

- Do not let skin come in contact with transmission oil and do not inhale fuel vapours.
- Wear protective gloves.
- Ensure adequate ventilation.

**Important!**

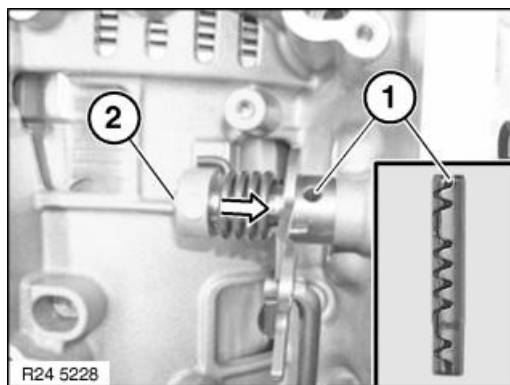
After completion of repair work, check [transmission oil level](#).

Use only approved [gearbox oil](#).

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

**Necessary preliminary tasks:**

- Remove [transmission](#).
- Remove [mechatronics](#).



Using a suitable tool, drive clamping sleeve (1) out of selector shaft.

Withdraw selector shaft (2) outwards.

Note:

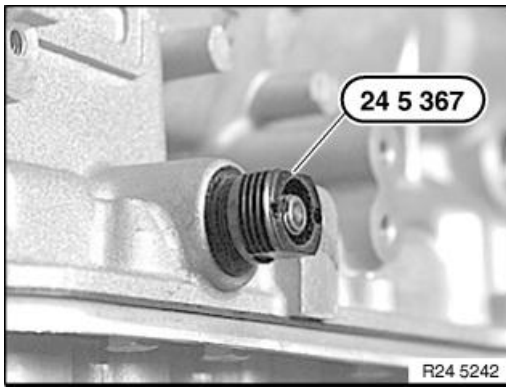
Return spring is under tension.

Installation note:

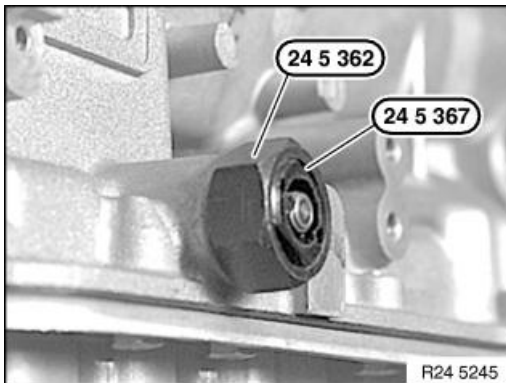
Replace selector shaft (2).

Replace clamping sleeve (1).

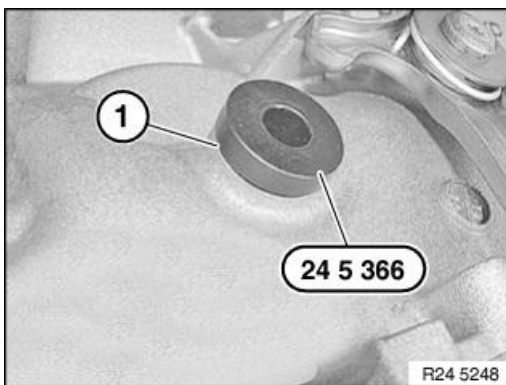
Insert narrower end of clamping sleeve (1) into hole first. Using a suitable tool, drive in clamping sleeve until it is flush with the hole.



Screw in special tool [24 5 367](#) until it is firmly connected with radial shaft seal.



Screw special tool [24 5 362](#) onto special tool [24 5 367](#) and tighten down. This pulls the shaft seal out of the transmission housing.



Oil sealing lip on shaft seal (1).

Drive radial shaft seal (1) fully home using special tool [24 5 366](#) and plastic hammer.

**Important!**

- Do not let skin come in contact with transmission oil and do not inhale fuel vapours.
- Wear protective gloves.
- Ensure adequate ventilation.

**Important!**

Remove transmission oil sump only after it has cooled down.

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 automatic transmission!

Installation note:

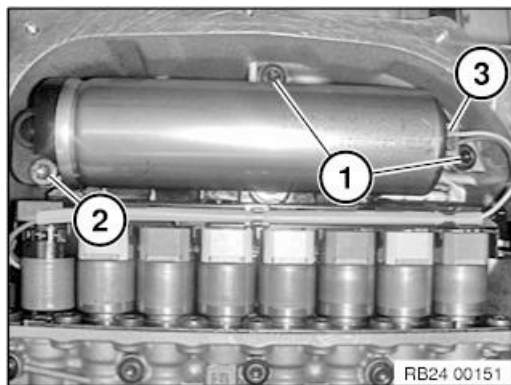
The transmission oil sump must be renewed **every** time it is removed.

**Important!**

When the hydraulic impulse storage is exchanged, the spring can be relaxed in pulses due to a mechanical fault in the hydraulic impulse storage, resulting in a sudden escape of oil.

**Necessary preliminary work:**

- [Remove transmission oil sump](#).



Release screws (1) (M6x20).

Release screw (2) (M6x59).

Tightening torque [24 30 5AZ](#).

Carefully unlock connector (3) with screwdriver.

Remove hydraulic impulse storage.

Installation note:

Observe installation position of screws (1 and 2).

Replace screws (1 and 2).

**Special tools required:**

- [24 1 180](#)
- [24 1 184](#)

**Attention!**

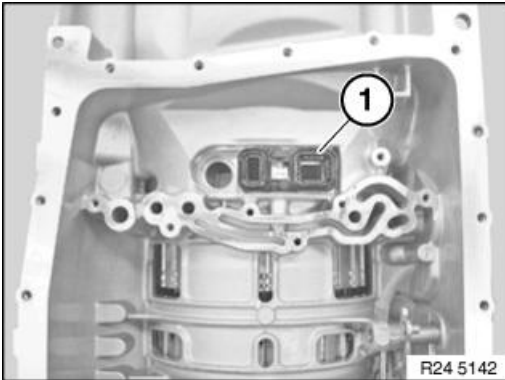
After completion of repair work, check [transmission oil level](#).

[Use only approved transmission oil.](#)

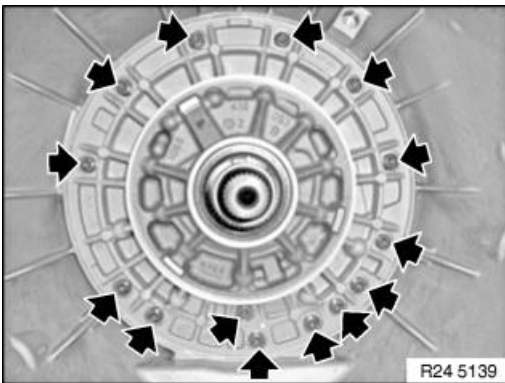
Failure to comply with this instruction will result in serious damage to the transmission.

**Necessary preliminary tasks:**

- Remove [automatic transmission](#)
- Secure transmission with [transmission holding bridge](#) on assembly stand
- Remove [torque converter](#)
- Remove [mechatronics](#)

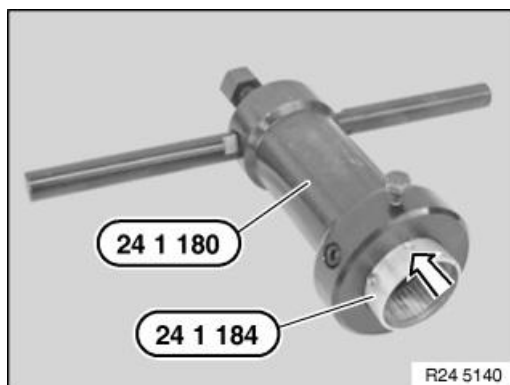


Remove adapter (1). *Installation note:*
Note installation position.

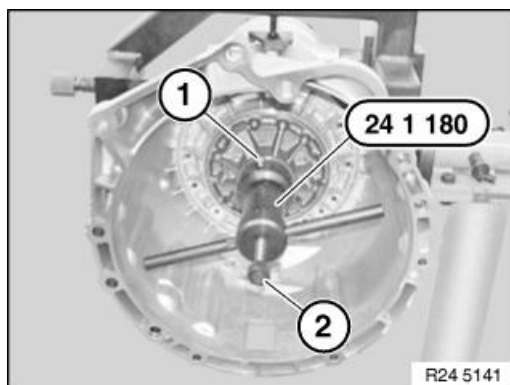


Loosen screws.

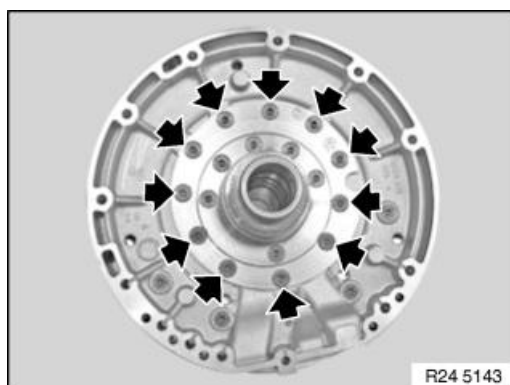
Tightening torque [24 31 3AZ](#).



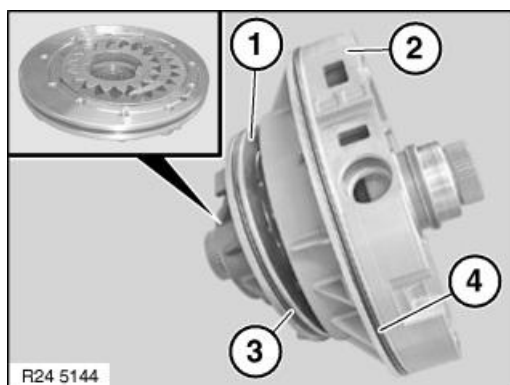
Slide special tool [24 1 184](#) completely into puller [24 1 180](#) .



Attach special tool [24 1 180](#) and secure with screw (1).
Insert screw (2) and release oil supply unit from transmission housing.



Loosen screws.
Tightening torque [24 31 1AZ](#).



Detach cover (1) from pump housing (2).
Replace O-rings (3 + 4).
Installation note:
Pay attention to installation position of gears during disassembly.

**Special tools required:**

- [00 2 300](#)
- [13 5 250](#)
- [24 0 200](#)
- [24 1 420](#)
- [24 2 410](#)
- [24 1 410](#)

**Important!**

- Do not let skin come in contact with transmission oil and do not inhale fuel vapours.
- Wear protective gloves.
- Ensure adequate ventilation.

**Important!**

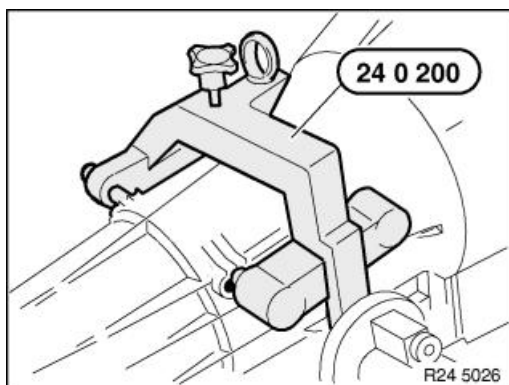
After completion of repair work, check [transmission oil level](#).

Use only approved [transmission oil](#).

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

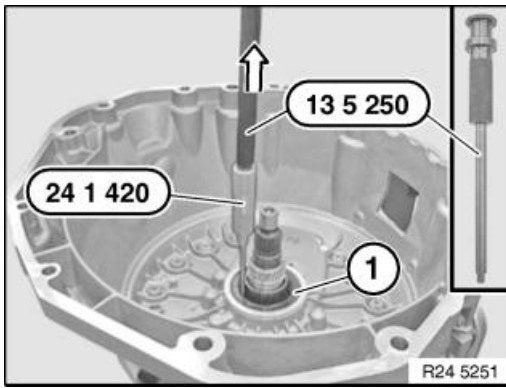
**Necessary preliminary tasks:**

- Remove [torque converter](#).

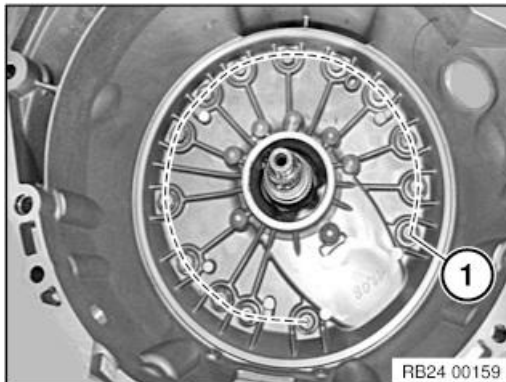


Secure transmission with special tool [24 0 200](#) on assembly stand [00 2 300](#). *Note:*

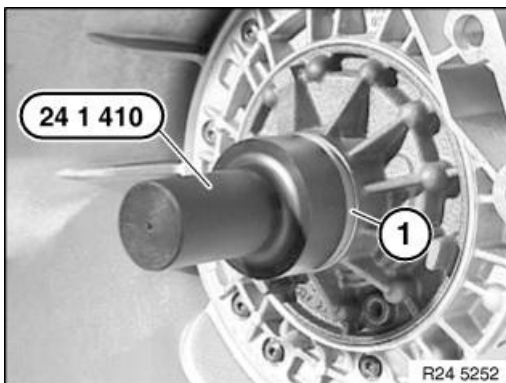
Read and comply with note on installation of [transmission retaining bridge](#).



Pull out radial shaft seal (1) with special tools [24 1 420](#) and [13 5 250](#).



The 14 aluminium torx screws contained in the drive repair kit are furnished with a sealing ring and must be **mandatory** replaced as well. Always only change one screw after the other for screws (1) along the dashed line. Tightening torque [24 30 6AZ](#).



Installation note:

1. Install the O-ring on the drive shaft.
2. Oil sealing lip on shaft seal.
3. Drive in radial shaft seal (1) with special tool [24 1 410](#) as far as it will go.

**Special tools required:**

- [00 2 300](#)
- [24 0 200](#)
- [24 2 351](#)
- [24 2 352](#)
- [24 2 353](#)
- [24 2 400](#)

**Necessary preliminary tasks:**

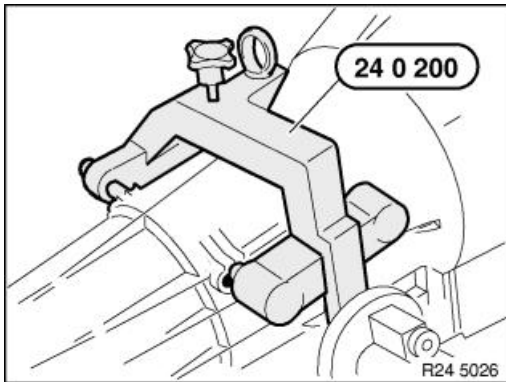
- Remove [automatic transmission](#).

**Important!**

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

Use only approved [transmission oil](#).

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

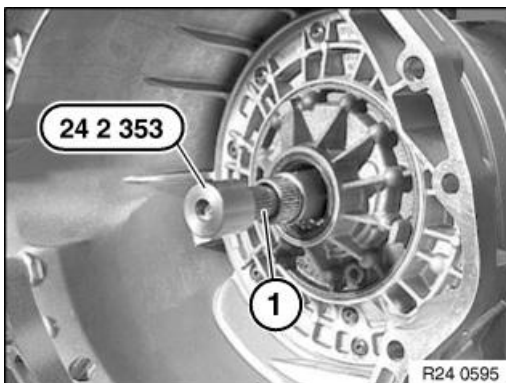


Secure transmission with special tool [24 0 200](#) on assembly stand [00 2 300](#).

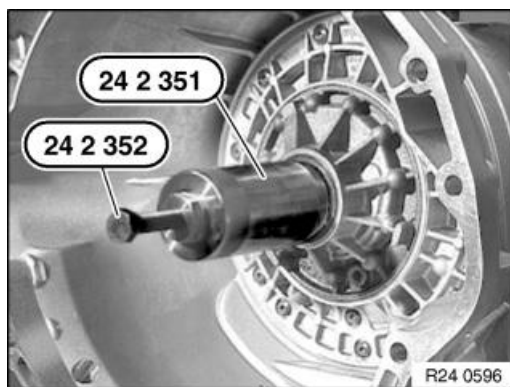
Remove [torque converter](#).

Note:

Read and comply with installation note on [transmission retaining bridge](#).

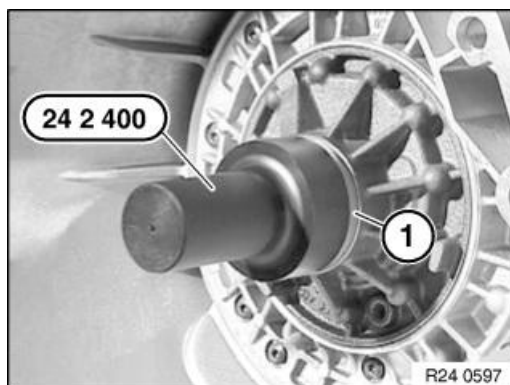


Attach special tool [24 2 353](#) to input shaft (1).



Screw in special tool [24 2 351](#) until it is firmly connected with radial shaft seal.

Screw in special tool [24 2 352](#) to remove radial shaft seal.



Oil sealing lip on radial shaft seal.

Drive in radial shaft seal (1) with special tool [24 2 400](#) as far as it will go.

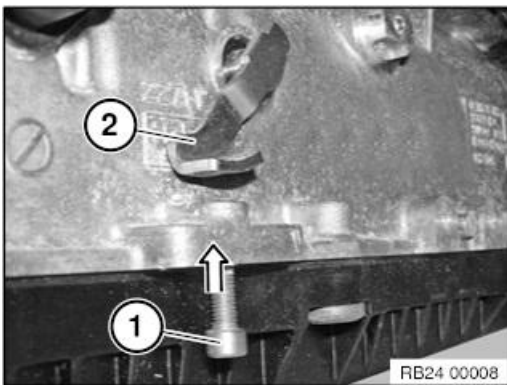
24 34 ... Manually releasing parking lock (from vehicle underbody) 8HP transmission



For various tasks, it is necessary to unlock and lock the parking lock.
This can only be performed below the vehicle.
Before releasing the parking lock, secure the vehicle against rolling away.



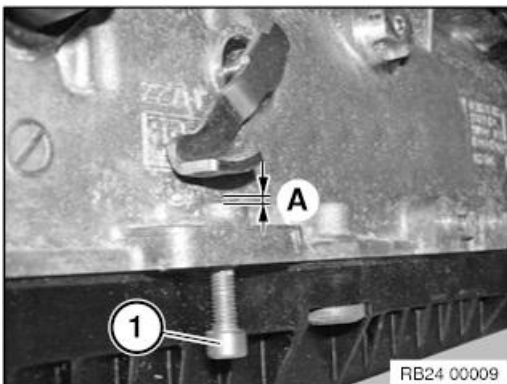
In the event of an open circuit, e.g. flat battery or electrical fault, the parking lock must be manually released, otherwise the wheel will be locked and the vehicle cannot be moved.



Raise vehicle.

Manual emergency release of parking lock

- Remove [underbody protection](#)
- Screw in screw (1) with hexagon socket (SW5) until parking lock is released by lever (2).
- It is **imperative** that bolt is always replaced.
- Clean thread with screw tap size M6X1,0.



Screw new micro-encapsulated screw (1) into thread. **Important!**

Screwing in and adjusting of screw to 1.5 to 2.5 mm above thread lip (A) must occur within 3 minutes.

The screw may no longer be turned after 3 minutes (hardening of adhesive), otherwise it must be replaced.

**Special tools required:**

- [24 2 390](#)

**Important!**

After completing repair work:

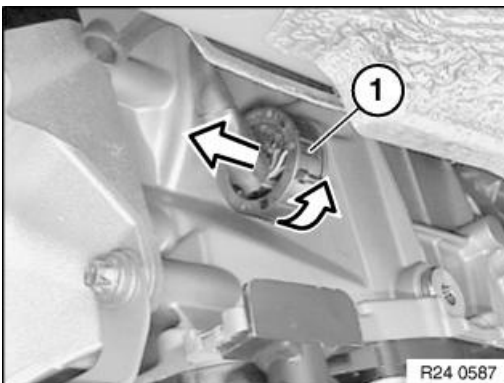
- Load specific data status with the BMW diagnosis system
- Check [transmission oil level](#)

Use only [approved transmission oil](#).

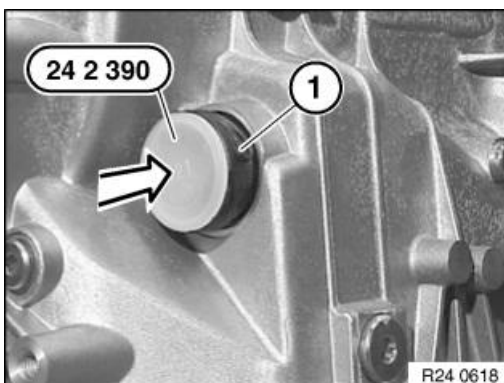
Failure to comply with this requirement will result in serious damage to the automatic transmission!

**Important!**

Read and comply with notes on [protection against electrostatic discharge \(ESD protection\)](#).



Unscrew connector (1) and disconnect.



Insert special tool [24 2 390](#) in sealing sleeve (1).

**Special tools required:**

- [24 2 390](#)

**Important!**

- Do not let skin come in contact with transmission oil and do not inhale fuel vapours.
- Wear protective gloves.
- Ensure adequate ventilation.

**Important!**

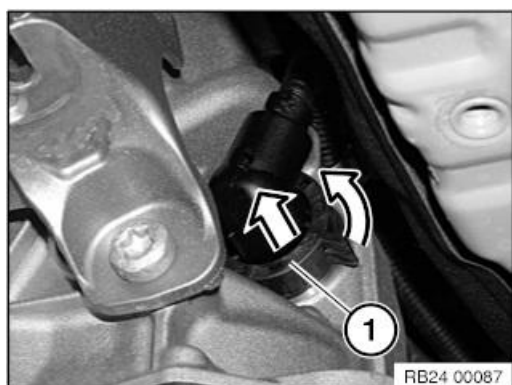
After completing work:

- Load specific data status with the BMW diagnosis system.
- Check [transmission oil level](#).
- Use only [approved transmission oil](#).

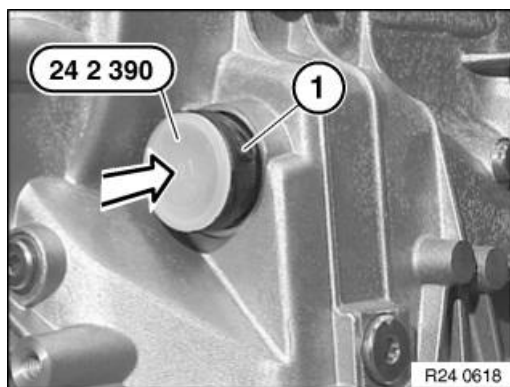
Failure to comply with this requirement will result in serious damage to the automatic transmission!

**Important!**

Read and comply with notes on [protection against electrostatic discharge \(ESD protection\)](#).



Unscrew connector (1) and disconnect.



Insert special tool [24 2 390](#) in sealing sleeve (1).

**Special tools required:**

- [24 2 390](#)

**Note:**

After completing work:

- Load specific data status with the BMW diagnosis system.

**Important!**

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

Use only [approved gearbox oil](#).

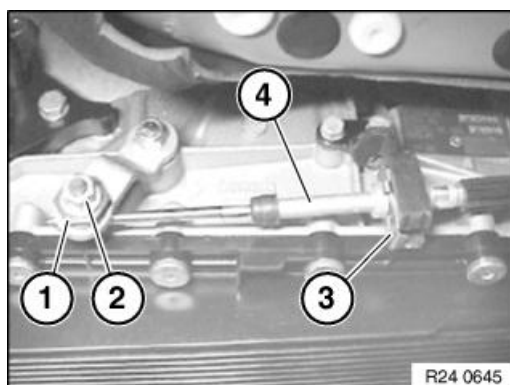
Failure to comply with this requirement will result in serious damage to the automatic transmission!

**Important!**

Read and comply with notes on [protection against damage from electrostatic discharge \(ESD protection\)](#).

**Necessary preliminary tasks:**

- Remove heat shields.
- Support the automatic transmission with hydraulic lifting equipment.
- Remove [transmission cross-member](#).

**Version 1:**

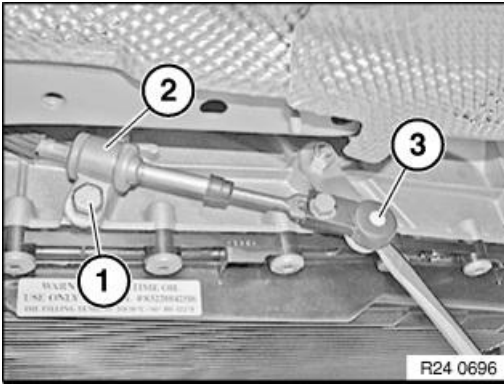
Grip clamping bush (1) and slacken nut (2).

Detach clamp (3) downwards using a screwdriver.

Pull cable (4) out of holder.

Installation note:

[Adjust gearshift lever](#).



Version 2:

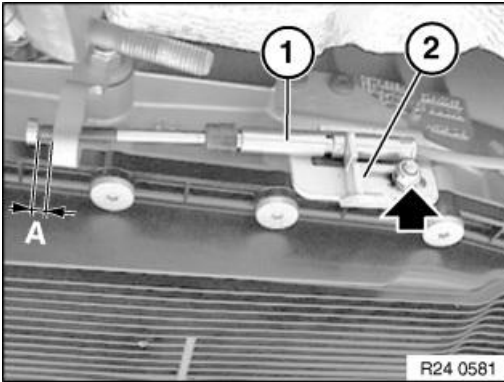
Release screw (1).

Remove clamping bracket (2).

Release shift cable head (3) using a screwdriver from ball head of shift cable lever.

Installation note:

[Adjust gearshift lever.](#)



Version 3:

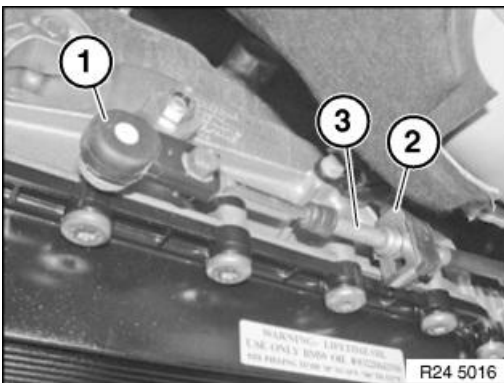
Unfasten nut.

Remove cable (1).

Installation note:

Adjusting cable:

- Release nut
- Adjust cable by means of holder (2) until spacing A = 1 mm is obtained
- Tighten down nut



Version 4:

Move selector lever to "Parking".

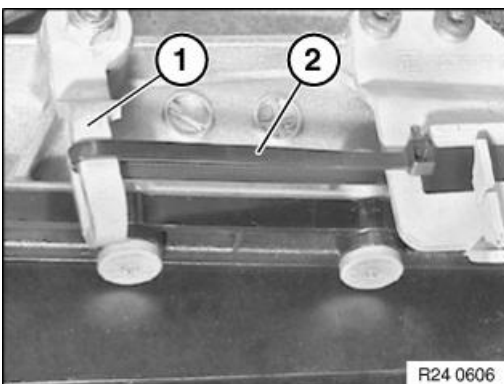
Release shift cable head (1) using a screwdriver from ball head of gearshift lever.

Detach clamp (2) downwards using a screwdriver.

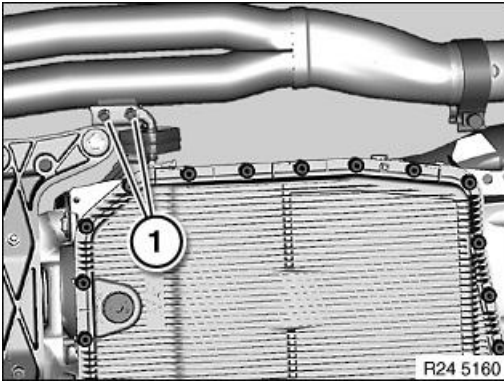
Slide cable (3) towards rear and disengaged in downward direction.

Installation note:

[Adjusting gearshift lever](#)

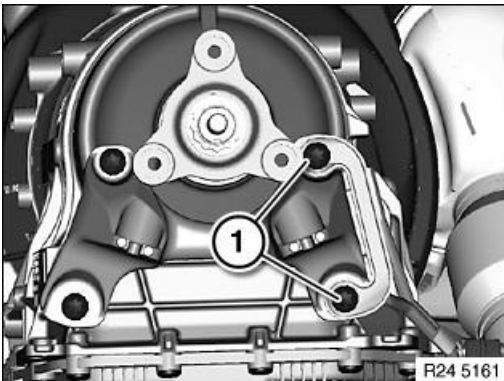


Secure lever (1) with a cable strap (2) or wire in vertical position. *Note:* E65 only.



Only M57T2

Release screws (1).

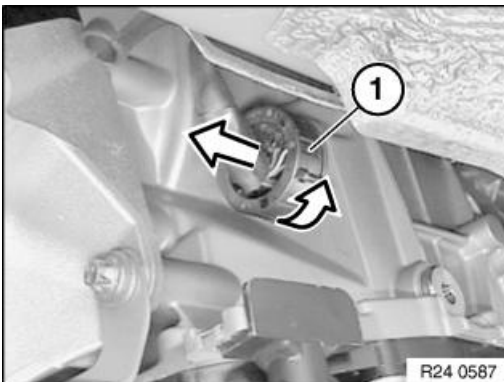


Only M57T2

Release screws (1).

Remove holder.

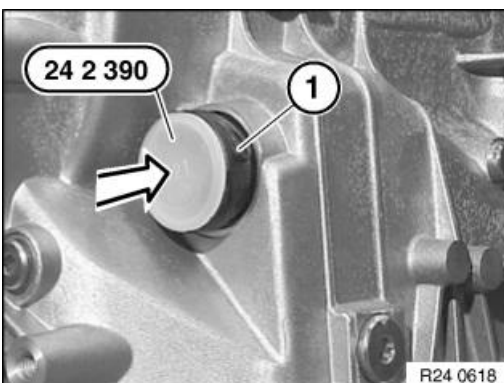
Tightening torque [24 71 6AZ](#).



Important!

Mechatronics can be destroyed by static discharges. Therefore the contacts inside the connector must not be touched. Insert special tool immediately after operation.

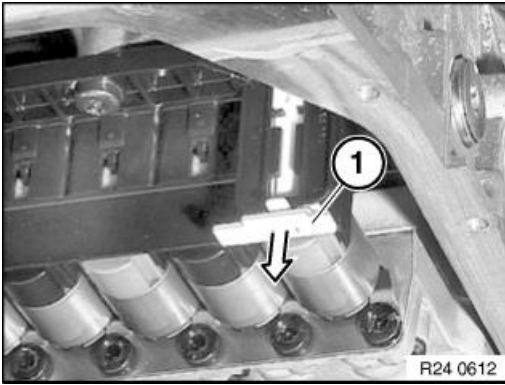
Unscrew connector (1) and disconnect.



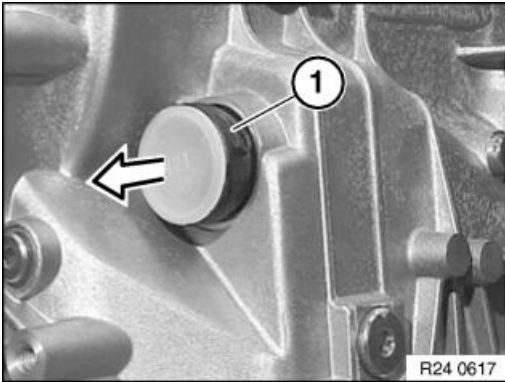
Insert special tool [24 2 390](#) in sealing cup (1).



Remove [transmission oil sump](#).



Unlock sealing sleeve with slide (1).



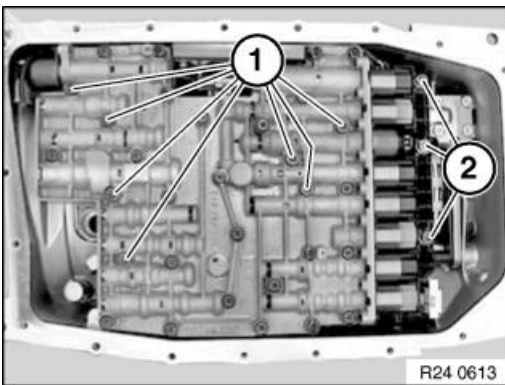
Note position of sealing cup.

Pull out sealing cup (1).

Installation note:

Screw in sealing sleeve partially (lug in upper area). Turn until lug engages in groove of transmission. Slide in sealing cup.

Lug on sealing cup must not be damaged!



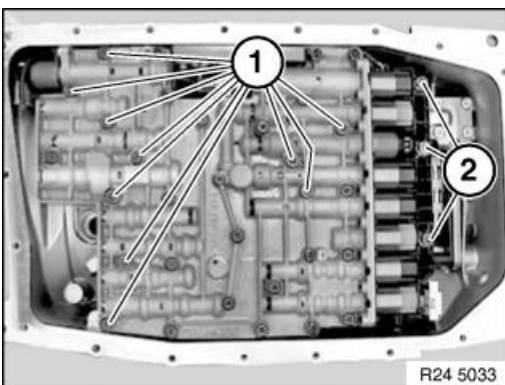
Note:

GA6HP19Z

Release all screws (1 and 2).

- 1 = M6 x 58 mm
- 2 = M6 x 20 mm

Remove mechatronics.



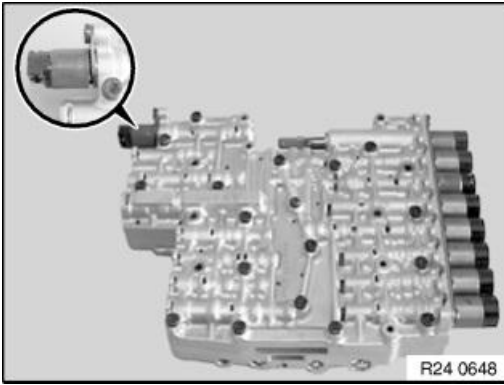
Note:

GA6HP19Z TU

Release all screws (1 and 2).

- 1 = M6 x 59 mm
- 2 = M6 x 20 mm

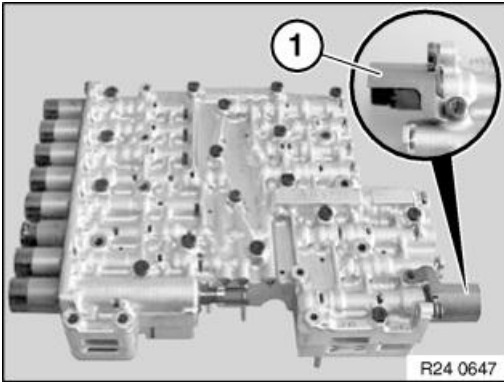
Remove mechatronics.



Important!

Only installed in E65!

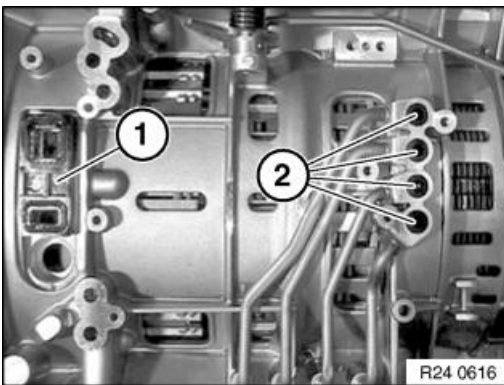
Mechatronics without protective bar for solenoid valve must not be reused after removal.



Important!

Only installed in E65!

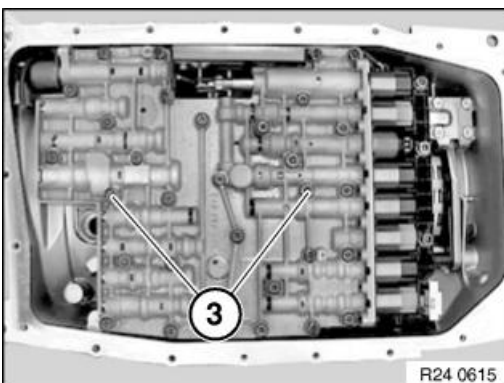
Fit/reuse only mechatronics with protective bar (1) for solenoid valve.



Installation note:

Check gaskets (1 and 2) for damage, replace gaskets if necessary.

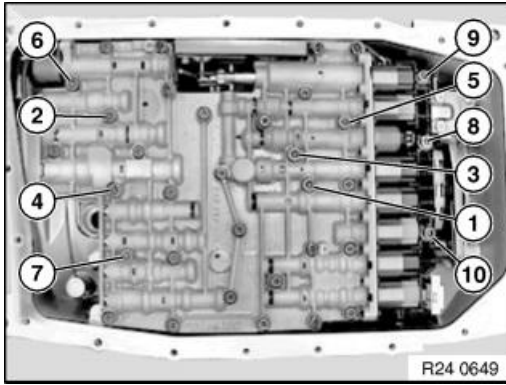
Coat new gaskets with automatic transmission fluid and install.



Installation note:

Insert screws (3) alternately until contact is made with each screw head.

Insert all further screws contact is made with each screw head.



Note:

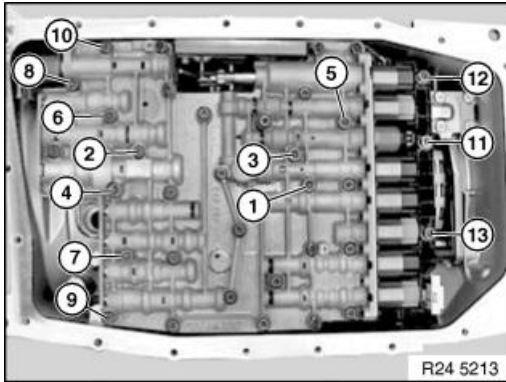
GA6HP19Z

Important!

Tighten down screws in order 1...10.

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

Tightening torque [24 30 1AZ](#).



Note:

GA6HP19Z TU

Important!

Tighten down screws in order 1...13.

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

Tightening torque [24 30 1AZ](#).

**Special tools required:**

- [24 1 430](#)
- [24 2 390](#)

**Important!**

- Do not let skin come in contact with transmission oil and do not inhale fuel vapours.
- Wear protective gloves.
- Ensure adequate ventilation.

*Note:*

After completing repair work:

- Load specific data version with ISTA.

**Important!**

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

Use only [approved gearbox oil](#).

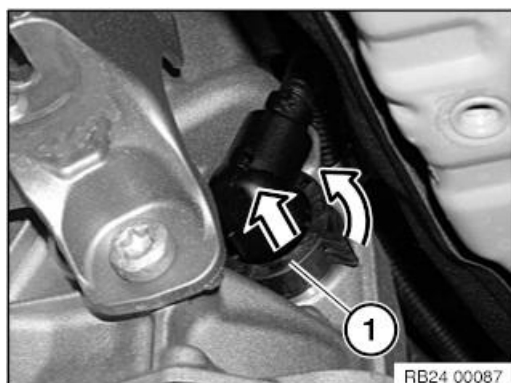
Failure to comply with this requirement will result in serious damage to the automatic transmission!

**Important!**

Read and comply with notes on [protection against damage from electrostatic discharge \(ESD protection\)](#).

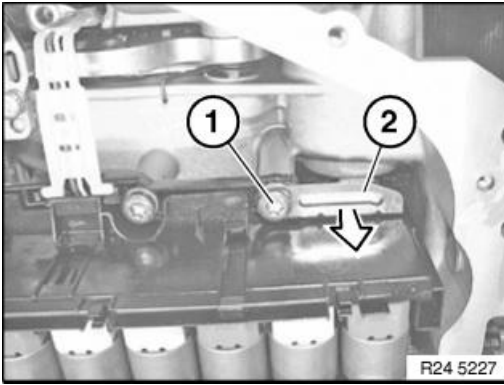
**Necessary preliminary tasks:**

- Remove [hydraulic impulse storage](#).

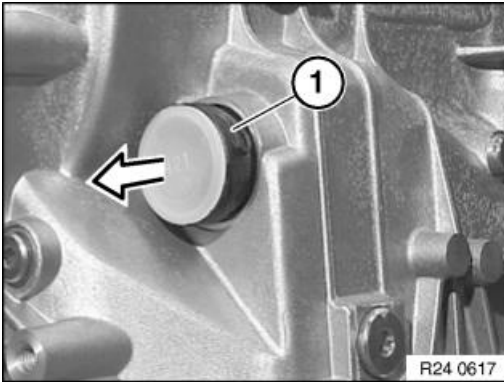
**Important!**

Mechatronics can be destroyed by static discharges. Therefore the contacts inside the connector must not be touched. Insert special tool immediately after operation.

Unscrew connector (1) and disconnect.



Release screw (1) and unlock sealing cup with slide (2).
Tightening torque [24 30 4AZ](#).

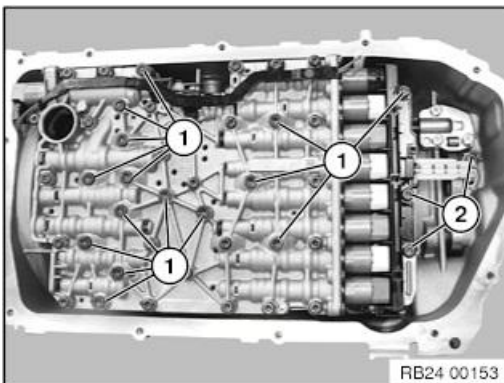


Pull out sealing cup (1). *Installation note:*
Replace sealing sleeve.

Fit sealing cup in position (lug on inside). Turn until lug engages in groove of transmission.

Slide in sealing cup.

Lug on sealing cup must not be damaged!



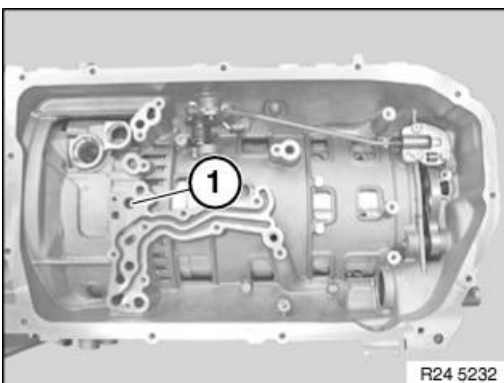
Release all screws (1 and 2).

- 1 = M6 x 59 mm
- 2 = M6 x 20 mm

Carefully remove mechatronics.

Installation note:

Replace all screws (1 and 2).

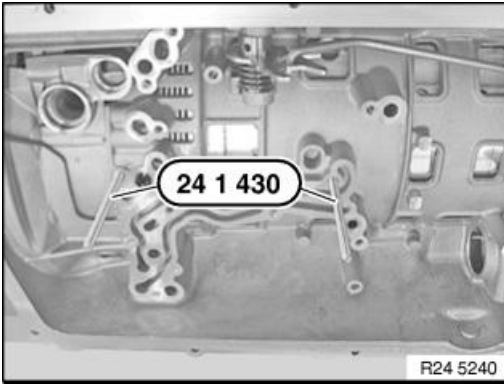


Installation note:

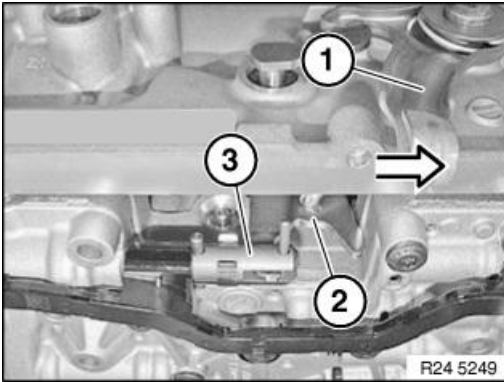
Replace gasket (1).

Coat new seal with automatic transmission fluid and install.

Coat O-ring and new pressure pipe on mechatronics with automatic transmission fluid.

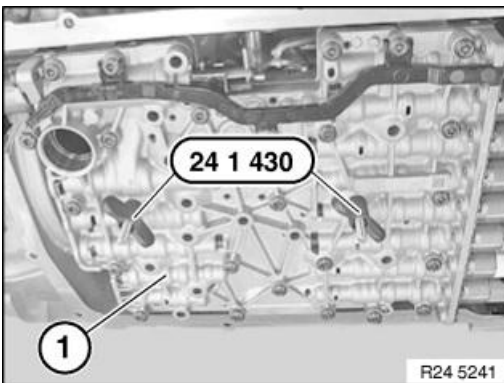


Screw in guide pins [24 1 430](#) at screw position 4 and 9.

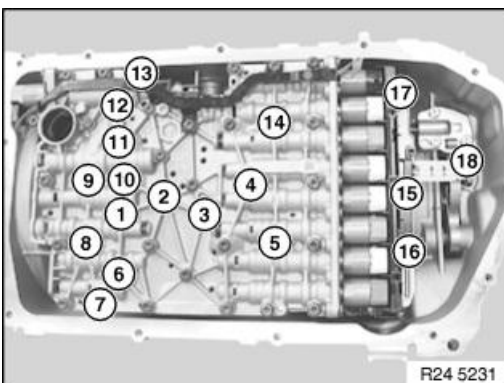


Fit mechatronics unit.

Feed shift dog (2) into gearshift shaft (3).



Screw down wing nuts as far as they will go on to the mechatronics unit (1).



Observe different screw lengths.

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

Installation note:

Insert screws 8 and 14 until screw heads make contact.

Remove guide pins and fit remaining screws.

Tighten screws in sequence 1....16 and 18.

Tightening torque [24 30 4AZ](#).

Important!

Screw 17 (M6 x 59 mm) is first attached to the hydraulic impulse storage.

Installation note:

Install the [hydraulic impulse storage](#).

**Important!**

- Do not let skin come in contact with transmission oil and do not inhale fuel vapours.
- Wear protective gloves.
- Ensure adequate ventilation.

**Important!**

Remove transmission oil sump only after it has cooled down.

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 automatic transmission!

Installation note:

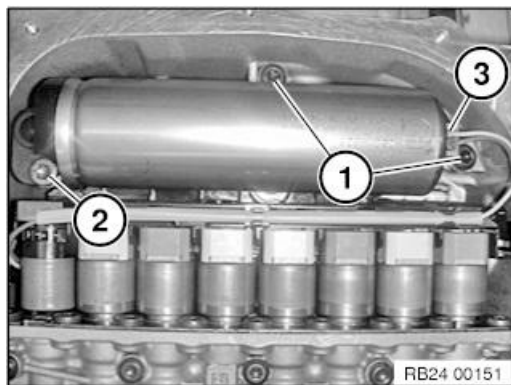
The transmission oil sump must be renewed **every** time it is removed.

**Important!**

When the hydraulic impulse storage is exchanged, the spring can be relaxed in pulses due to a mechanical fault in the hydraulic impulse storage, resulting in a sudden escape of oil.

**Necessary preliminary work:**

- [Remove transmission oil sump](#).



Release screws (1) (M6x20).

Release screw (2) (M6x59).

Tightening torque [24 30 5AZ](#).

Carefully unlock connector (3) with screwdriver.

Remove hydraulic impulse storage.

Installation note:

Observe installation position of screws (1 and 2).

Replace screws (1 and 2).

**Special tools required:**

- [24 1 180](#)
- [24 1 184](#)

**Attention!**

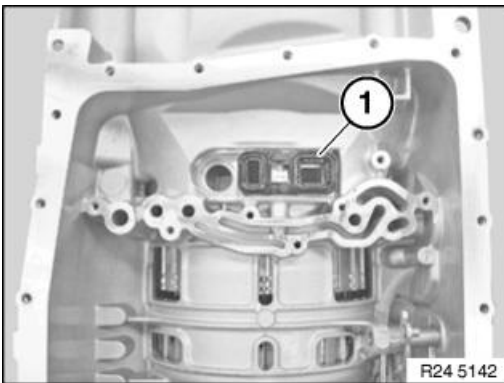
After completion of repair work, check [transmission oil level](#).

[Use only approved transmission oil.](#)

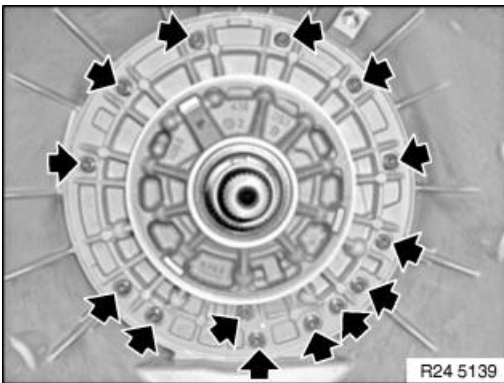
Failure to comply with this instruction will result in serious damage to the transmission.

**Necessary preliminary tasks:**

- Remove [automatic transmission](#)
- Secure transmission with [transmission holding bridge](#) on assembly stand
- Remove [torque converter](#)
- Remove [mechatronics](#)

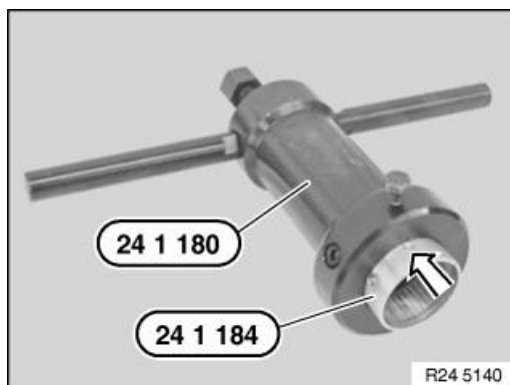


Remove adapter (1). *Installation note:*
Note installation position.

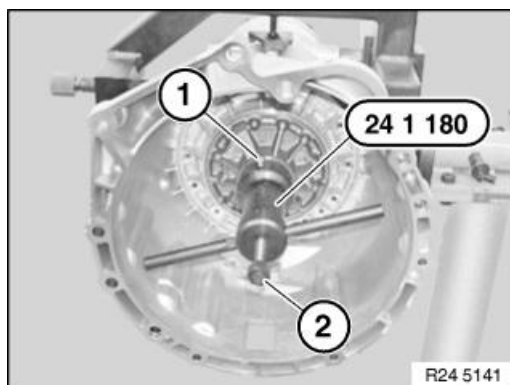


Loosen screws.

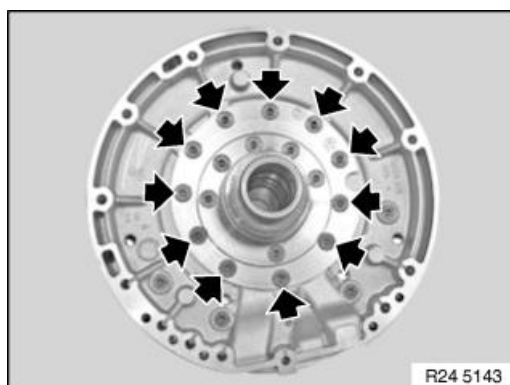
Tightening torque [24 31 3AZ](#).



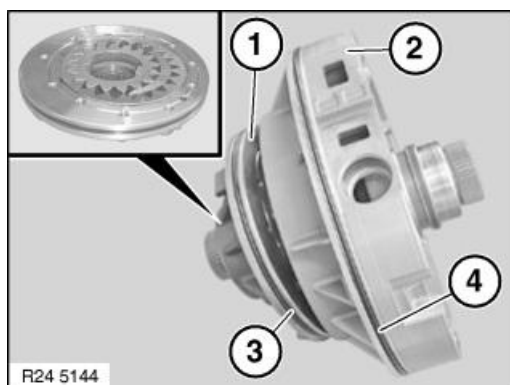
Slide special tool [24 1 184](#) completely into puller [24 1 180](#).



Attach special tool [24 1 180](#) and secure with screw (1).
Insert screw (2) and release oil supply unit from transmission housing.



Loosen screws.
Tightening torque [24 31 1AZ](#).



Detach cover (1) from pump housing (2).
Replace O-rings (3 + 4).
Installation note:
Pay attention to installation position of gears during disassembly.

**Special tools required:**

- [24 2 390](#)

**Important!**

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

Use only [approved transmission oil](#).

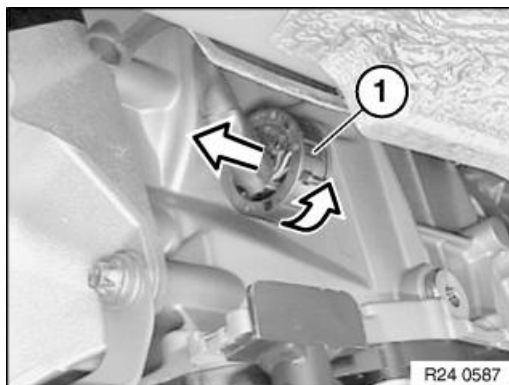
Failure to comply with this requirement will result in serious damage to the automatic transmission!

**Necessary preliminary tasks:**

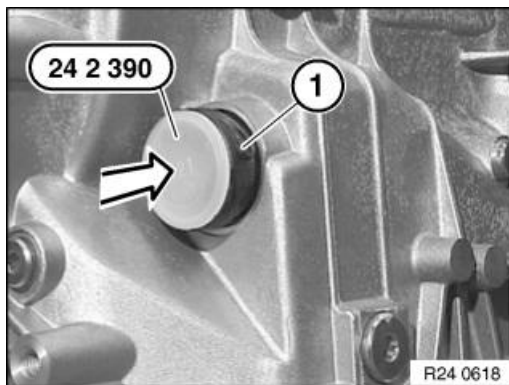
- Remove heat shields
- Remove [transmission oil sump](#)
- Remove [transmission cross-member](#).

Important!

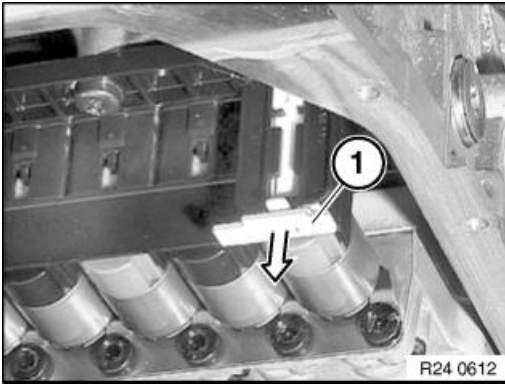
Support transmission with workshop jack.



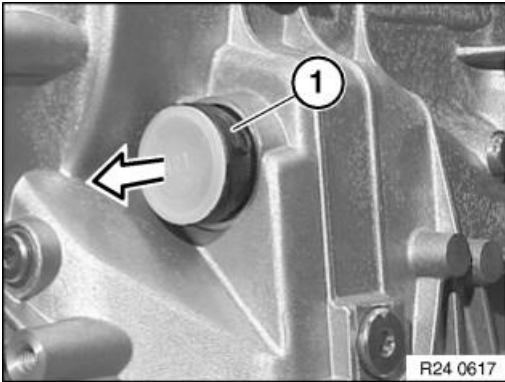
Unlock and disconnect connector (1) by turning.



Insert special tool [24 2 390](#) in sealing cup (1).



Unlock sealing sleeve with slide (1).



Note:

Note position of sealing cup.

Pull out sealing cup (1). *Installation note:*

Screw in sealing sleeve partially (lug in upper area). Turn until lug engages in groove of transmission. Slide in sealing cup.

Lug on sealing sleeve must not be damaged!

**Special tools required:**

- [24 2 390](#)

**Important!**

- Do not let skin come in contact with transmission oil and do not inhale fuel vapours.
- Wear protective gloves.
- Ensure adequate ventilation.

**Important!**

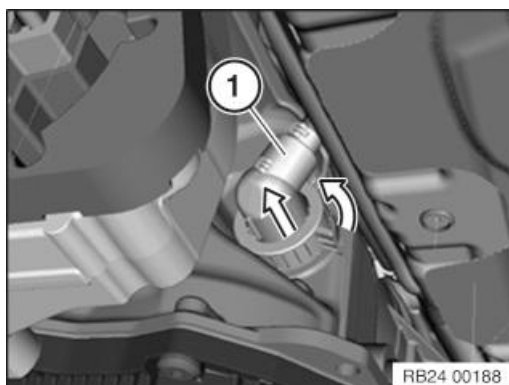
After completion of repair work, check [transmission oil level](#).

Use only [approved transmission oil](#).

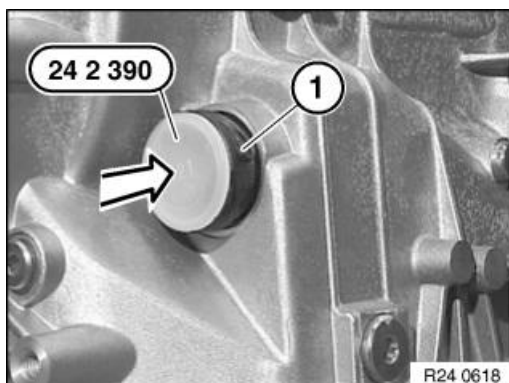
Failure to comply with this requirement will result in serious damage to the automatic transmission!

**Necessary preliminary tasks:**

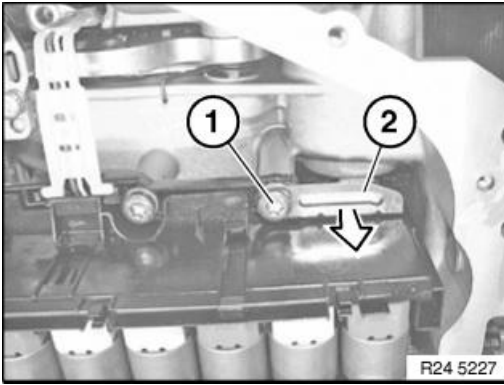
- Remove [hydraulic impulse storage](#).



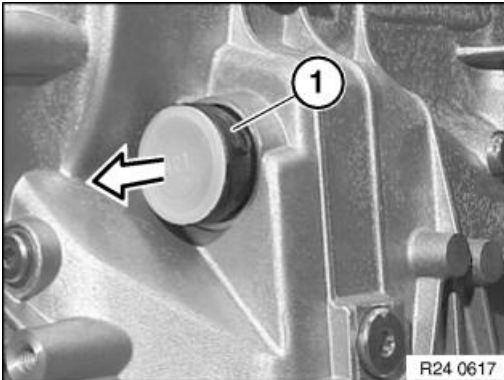
Unlock and disconnect connector (1) by turning.



Insert special tool [24 2 390](#) in sealing sleeve (1).



Release screw (1) and unlock sealing cup with slide (2).
Tightening torque [24 30 4AZ](#).



Note:

Make a note of installation position of sealing sleeve.

Pull out sealing cup (1). *Installation note:*

Fit sealing sleeve in position (lug on inner surface). Turn until lug engages in groove of transmission. Slide in sealing cup.

Lug on sealing cup must not be damaged!



For various tasks, it is necessary to unlock and lock the parking lock.
Before releasing the parking lock, secure the vehicle against rolling away.



- The emergency release is only possible if the engine does **not** start and the starter is turning.
- If the emergency release must be activated although the engine starts, the fuse for the electrical fuel pump may be pulled.
- The emergency release is active for 15 minutes.
- As soon as a wheel speed signal is recorded, this period will be extended by another 15 minutes.
- After this period of time, the transmission lock will be engaged without a message.
- The chronological information depends on the battery capacity.



- Only specially trained Service personnel are permitted to operate both the [mechanical](#) as well as the electronic emergency transmission release system.
- The vehicle must be raised and the underbody panelling removed in order to operate the [mechanical](#) emergency transmission release system.

Caution!

To operate the electronic emergency transmission release system the vehicle must **not** be towed but rather only pushed.

In the case of misuse, a corresponding fault is entered in the fault memory.

Unlock transmission lock electronically

- Switch the ignition on.
- Apply the brake pedal and hold it down during the entire procedure.
- Press start/stop button.
- The starting operation may last for some seconds in low ambient temperatures and for diesel engines.
- As soon as the starter motor can be heard to operate



- Press and hold down the release button (1)



1. The specified time must necessarily be complied with!
2. Push selector lever (2) forward up to point of resistance and hold for 4 seconds.
3. Release the selector lever and quickly move it forward by another level again.



- The selector lever position N is displayed in the instrument cluster.
- The transmission lock is now electronically unlocked.
- Release the brake pedal after the transmission lock has been successfully unlocked.
- Leave the ignition switched on in order to subsequently move the vehicle.
- The transmission automatically shifts into P when the ignition is turned off.



Caution!

The transmission lock is reactivated without a message when the start/stop button is pressed again.

If the gearbox cannot be released, turn the ignition off and on again and repeat the previous steps.

Allow the starter to cool down for approx. 10 minutes after unsuccessful attempts.

**Special tools required:**

- [24 4 000](#)

**Important!**

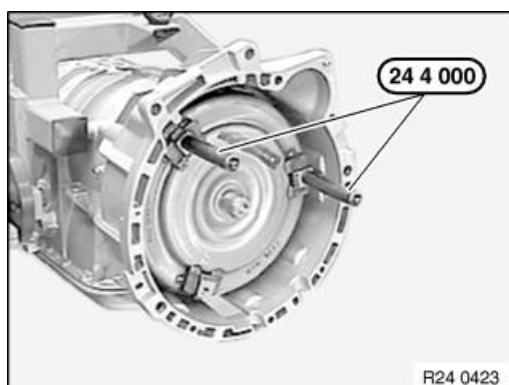
After completion of work, check [transmission oil level](#).

Use only approved [transmission oil](#).

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

**Necessary preliminary tasks:**

- Remove [automatic transmission](#)



Screw special tool [24 4 000](#) into torque converter.

Remove torque converter.

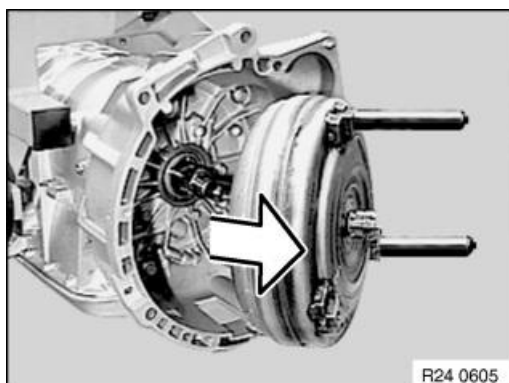
Note:

When torque converter is removed, transmission oil flows out.

**Installation note:**

When installing, do not damage radial shaft seal and bearing.

If the torque converter is not correctly installed, the driver of the pump impeller may be damaged when the transmission is flanged to the engine.



Remove torque converter and set down vertically.



Installation note:

Push torque converter through radial shaft seal onto transmission shaft to the limit position.

Press torque converter by hand into converter housing and turn in the process. Converter hub recess must snap into place in driver of pump impeller. Torque converter must be felt to slip inwards.

**Special tools required:**

- [00 2 550](#)
- [24 4 000](#)
- [24 1 440](#)

**Important!**

- Do not let skin come in contact with transmission oil and do not inhale fuel vapours.
- Wear protective gloves.
- Ensure adequate ventilation.

**Important!**

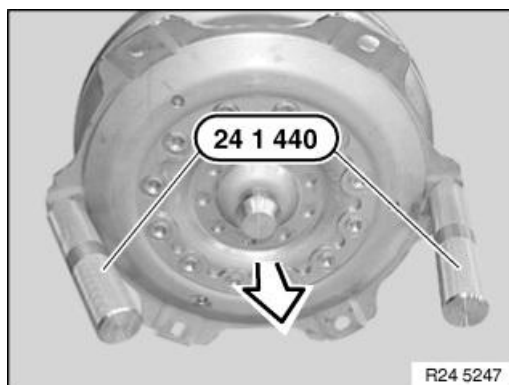
After completion of repair work, check [transmission oil level](#).

[Use only approved transmission oil.](#)

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

**Necessary preliminary tasks:**

- Remove [automatic transmission](#).



Fit special tool [24 1 440](#) in torque converter.

Remove torque converter.

Note:

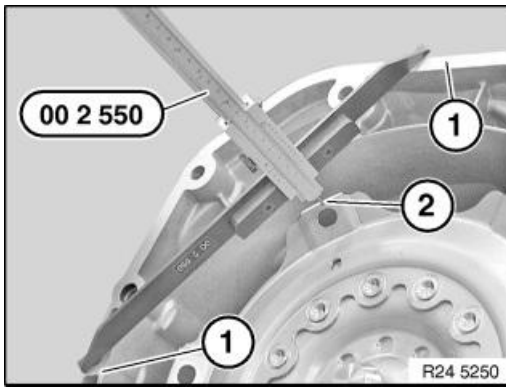
When torque converter is removed, transmission oil flows out.

Place torque converter vertically.

**Installation note:**

When installing, do not damage radial shaft seal and bearing.

If the torque converter is not correctly installed, the driver of the pump impeller may be damaged when the transmission is flanged to the engine.



Installation note:

O-ring on drive shaft, must be replaced when exchanging the torque converter.

Push torque converter through radial shaft seal onto transmission shaft to the limit position.

Press torque converter by hand into converter housing and turn in the process. Converter hub recess must snap into place in driver of pump impeller. Torque converter must be felt to slip inwards.

Determine distance between contact surface (1) and outer edge (2) of hole in torque converter with special tool [00 2 550](#).

Note:

The measured value must be ≥ 25 mm.

**Special tools required:**

- [24 1 180](#)
- [24 1 184](#)

**Attention!**

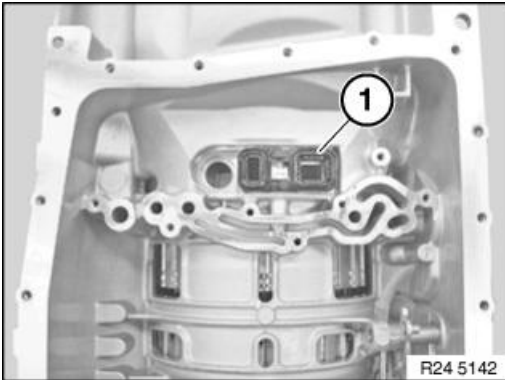
After completion of repair work, check [transmission oil level](#).

[Use only approved transmission oil.](#)

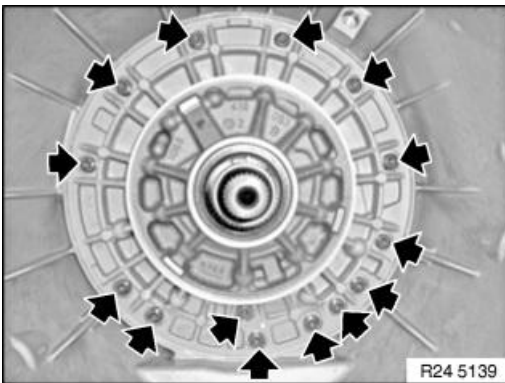
Failure to comply with this instruction will result in serious damage to the transmission.

**Necessary preliminary tasks:**

- Remove [automatic transmission](#)
- Secure transmission with [transmission holding bridge](#) on assembly stand
- Remove [torque converter](#)
- Remove [mechatronics](#)

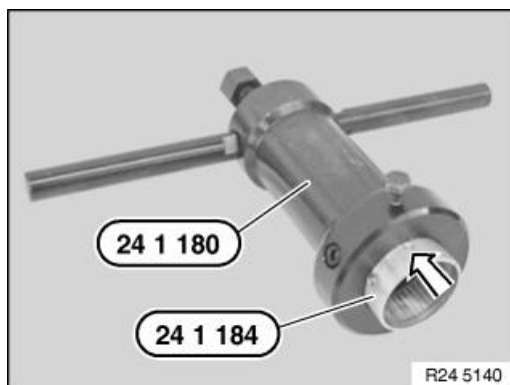


Remove adapter (1). *Installation note:*
Note installation position.

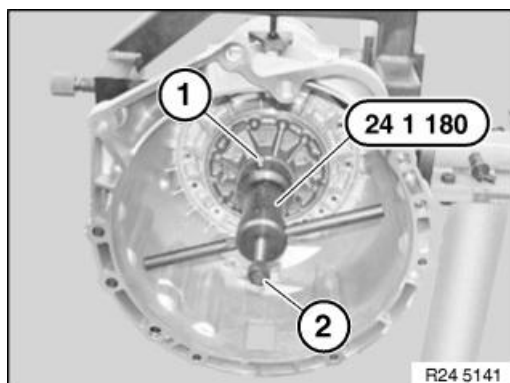


Loosen screws.

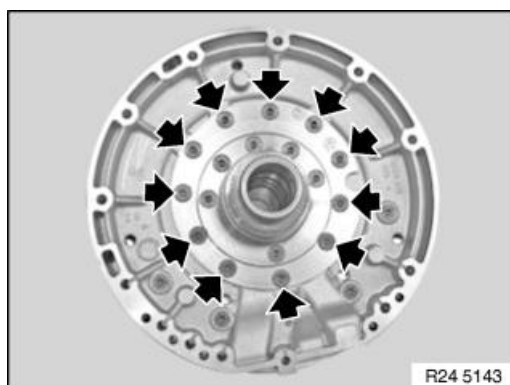
Tightening torque [24 31 3AZ](#).



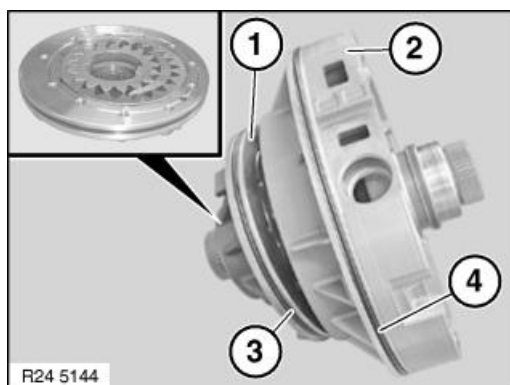
Slide special tool [24 1 184](#) completely into puller [24 1 180](#).



Attach special tool [24 1 180](#) and secure with screw (1).
Insert screw (2) and release oil supply unit from transmission housing.



Loosen screws.
Tightening torque [24 31 1AZ](#).



Detach cover (1) from pump housing (2).
Replace O-rings (3 + 4).
Installation note:
Pay attention to installation position of gears during disassembly.



Special tools required:

- [23 0 490](#)



Important!

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

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

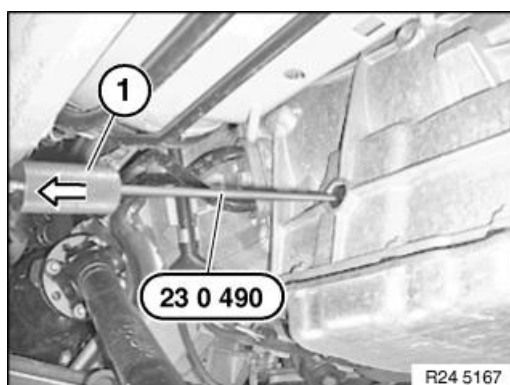
Failure to comply with this requirement will result in serious damage to the automatic transmission!



Necessary preliminary tasks:

- Remove [rear underbody protection](#)
- Remove front propeller shaft at transfer box and tie to one side.

Tasks are described in [removing front propeller shaft](#).



Screw special tool [23 0 490](#) into sealing cap.

Drive out sealing cap using impact weight (1).

Important!

Clean bore hole using a clean cloth and ensure that there is no more oil sticking to it.

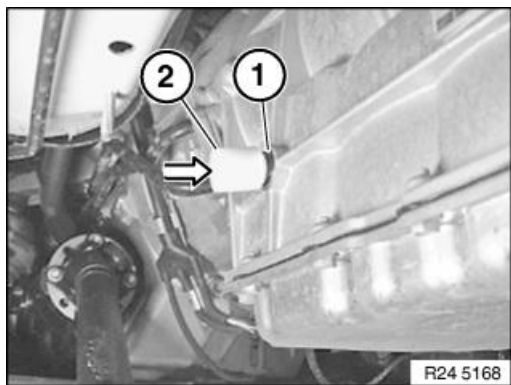


Place new sealing cap (1) on drift (3). **Important!**

Sealing cap (1) must be inserted into transmission housing with sealing lip (2).

Note:

Drift (3) for driving in sealing cap is contained in repair kit.



Drive in new sealing cap (1) to the stop with drift (2).



Special tools required:

- [23 0 490](#)



Important!

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

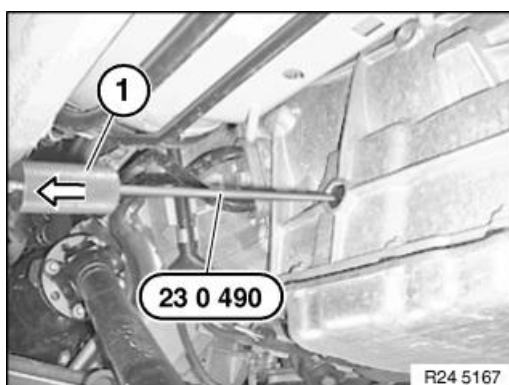
Use only the [approved automatic transmission oil](#) in this automatic transmission.

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



Necessary preliminary tasks:

- Remove [rear underbody protection](#)
 - Remove front propeller shaft at transfer box and tie to one side.
- Tasks are described in [removing front propeller shaft](#).



Screw special tool [23 0 490](#) into sealing cap.

Drive out sealing cap using impact weight (1).

Important!

Clean bore hole using a clean cloth and ensure that there is no more oil sticking to it.

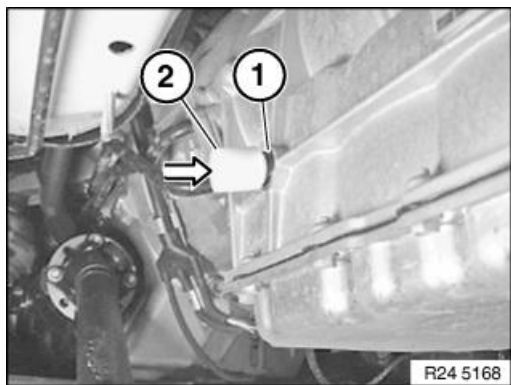


Place new sealing cap (1) on drift (3). **Important!**

Sealing cap (1) must be inserted into transmission housing with sealing lip (2).

Note:

Drift (3) for driving in sealing cap is contained in repair kit.



Drive in new sealing cap (1) to the stop with drift (2).