



When using the analogue KOMBI

1. Switch the ignition on.
2. Press the trip distance recorder reset button (1) (referred to as button in the following) for approx. 10 seconds until the 1st service job is displayed in the display (2).
Bring up the next item by briefly pressing the button again. Select the desired service job.
3. If a reset is possible, this is displayed in the instrument cluster as "Reset possible".
Press the button for 3 s to start the reset.
4. Confirm text message "Perform reset?" by pressing the button for 3 seconds again.
The status of the reset is indicated in the display by a progress bar and in text as "Reset in progress".
5. The reset is confirmed as "Reset successful" after completion.



When using the digital KOMBI

1. Generate PWF status "Residing".
2. Generate PWF status "PAD": For this purpose, press the START-STOP button three times.
3. Press trip distance recorder reset button (1) for approx. 10 s, until the 1st scope of maintenance work appears on the display. The next position is reached by briefly pressing the trip distance recorder reset button (1) again.
4. Select the desired service job. If a CBS reset is possible, "Reset possible" is displayed on the instrument cluster (KOMBI).
5. Confirm the "Perform reset?" text message. For this purpose, hold down the trip distance recorder reset button for (1) 3 s.
6. The CBS reset is confirmed as "Reset successful" after it is performed.



CBS reset of inspections/tests required by law

Input the target date for the statutory vehicle inspection by clicking on the scope of maintenance work with the controller in the CBS main menu of the Central Information Display under:

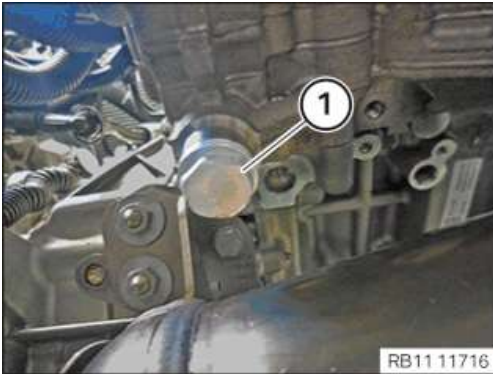
- Vehicle information
- Vehicle status
- Service requirements
- Vehicle inspection
- Enter service appointment

The target month or the target year can be set and acknowledged by turning and pressing





- A small amount of engine oil emerges when removing the chain tensioner (1), have a cleaning cloth ready.
- Detach the chain tensioner (1) with conventional tools.

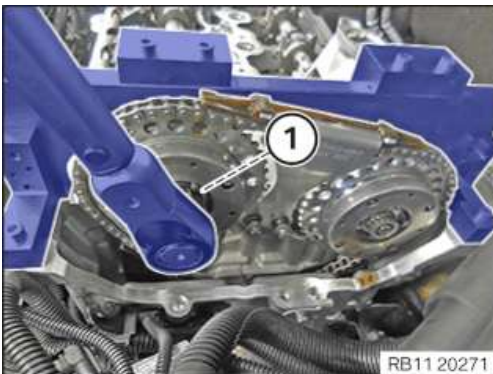


- Feed out and remove the chain tensioner (1).

22 – Releasing the VANOS central valve of the intake adjuster



- To release the VANOS central valve (1), use the reversible ratchet (2) from the special tool with the special tool [2 450 487](#).



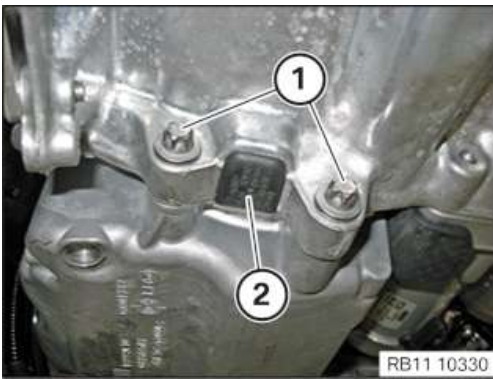
- Release the VANOS central valve (1) of the intake adjuster.

23 – Releasing VANOS central valve of the exhaust camshaft adjuster

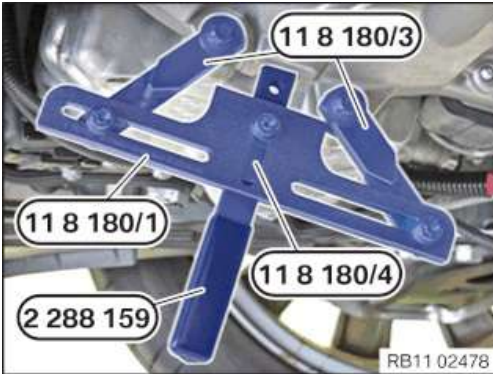


- To release the VANOS central valve (1), use the reversible ratchet (2) from the special tool with the special tool [2 450 487](#).





- Unscrew the transmission bolts (1).
- Feed out and remove the protective cap (2).



- Prepare special tool [0 493 587 \(11 8 180\)](#).
- Secure special tool [0 493 587 \(11 8 180\)](#) with the transmission bolts.
- Slide special tool [2 288 159](#) into the transmission housing and fasten the flywheel.
- Tighten down all screws.



- Remove screws (arrows).
- Feed out and remove the vibration damper (1).

33 – Remove clutch

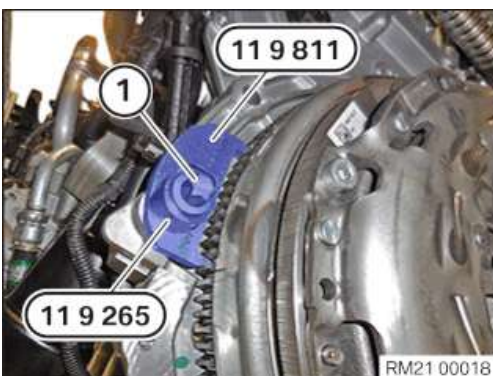


CAUTION

Materials harmful to health.

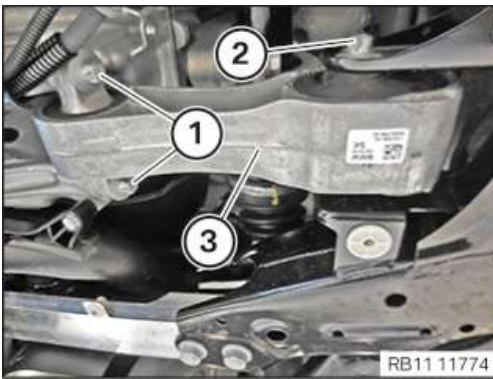
Contact with fluids harmful to health!

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



- Block flywheel with transmission bolt (1) and special tools [0 496 171 \(11 9 811\)](#) and [0 494 793 \(11 9 265\)](#).





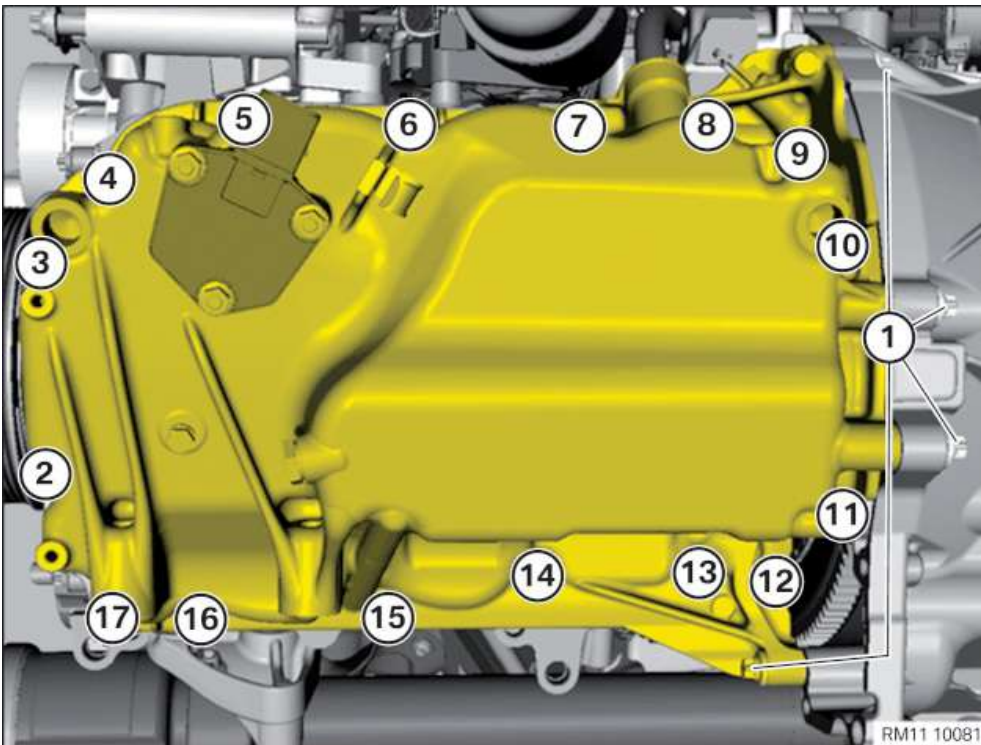
CAUTION

Component with heavy weight.

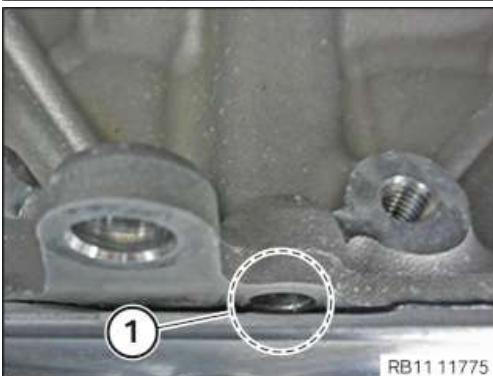
Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

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



- Unscrew the bolts (1) from the transmission.
- Loosen screws (2) to (17).



- Detach the oil sump in the area (1) with aperture **carefully**.



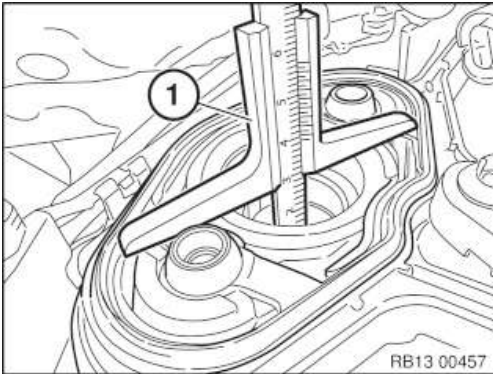


RISK OF DAMAGE

Damage to the engine.

The engine may be damaged if it is manually rotated in the wrong direction.

- Turn the combustion engine exclusively by hand in the correct direction of rotation: a) Clockwise, facing the vibration damper or b) Anticlockwise, facing the chain drive. (b) only applies when the rear timing chain is installed.



- Place the depth gauge (1) flat onto the high pressure pump flange.
- Turn the engine at the central bolt in the direction of engine rotation until the BDC position of the camshaft is reached.

The depth gauge (1) is in the deepest position.

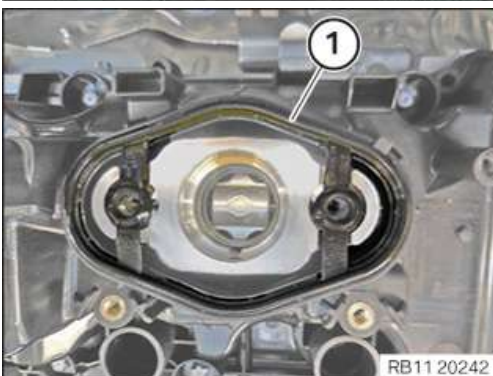


- Rotate the engine with the special tool 0 493 380 (11 6 480) clockwise until the cam of the high-pressure pump drive is at the **BDC position**.

Do **not** crank the engine in reverse.



- Check the threads (1) at the high pressure pump flange for sealant residue and clean with conventional tools as needed.
- Make sure that no contamination enters the engine.
- Cover the openings with suitable materials.



- Guide out and remove gasket (1).
 - Renew the seal (1).
- Parts:** Gasket
- Insert and install the seal (1).

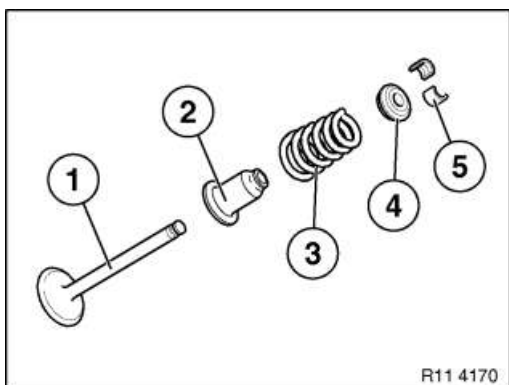


**Special tools required:**

- 11 4 480

**Necessary preliminary tasks:**

- Remove cylinder head.
- Remove exhaust camshaft.
- Remove intake camshaft
- Remove rocker arms
- Remove valve springs
- Remove valve stem seals

**Arrangement:**

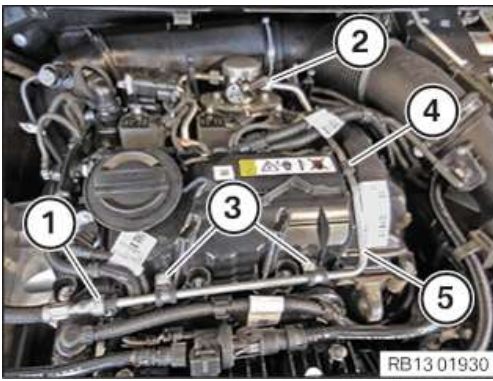
- 1) Valve
- 2) Valve stem seal with spring cup, bottom
- 3) Valve spring
- 4) Top spring cup
- 5) Valve keys

If the valves are to be reused, set them down in special tool 11 4 480 in a tidy and orderly fashion.

**Required follow-up work:**

- Install valve stem seals
- Install valve springs
- Install rocker arm
- Install intake camshaft
- Install exhaust camshaft
- Installing the cylinder head





- Tighten the screws (3).

Fuel delivery line to cylinder head cover

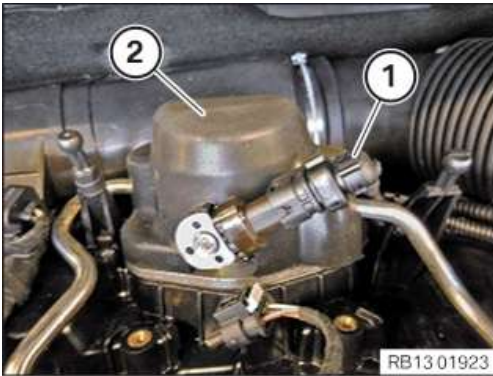
M6x18		Tightening torque	7 Nm
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- Tighten union nut (2).

Fuel delivery line to high pressure pump

M14		Tightening torque	26 Nm
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- Connect and lock the fuel line (1) at the fuel feed line (5).
The fuel line (1) must engage audibly.
- Make sure that the rubber damper (4) is installed correctly.
- Insert and install the sound insulation (2).
- Connect and lock the connector (1).
The connector (1) must engage audibly.



47 – Installing all spark plugs



TECHNICAL INFORMATION

Exclusively swivelling extensions may be used for the reversible ratchet. Rigid mounting tool and variable plug connections with rigid option may not be used; there is a risk that the insulator breaks.

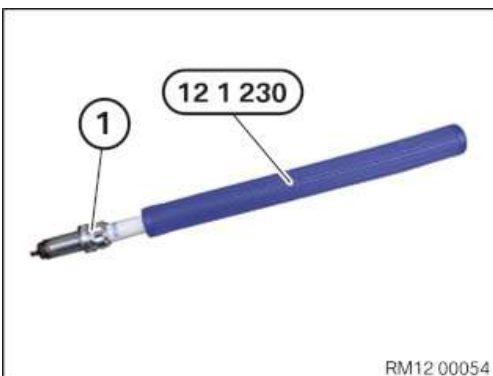


TECHNICAL INFORMATION

In order to avoid an uncontrolled flashover of ignition sparks, special attention must be paid to the cleanliness of the insulator (ceramic) of the spark plugs.

Do not touch the insulator of the spark plugs with your fingers or label it and make sure it does not come into contact with liquid media, such as fuel or oil.

Always handle spark plugs at the spark plug thread. Feeding in the spark plugs using a clean hose (fitting aid 12 1 230) is permitted.



- Insert spark plug (1) into special tool [0 496 065 \(12 1 230\)](#).





TECHNICAL INFORMATION

It is **mandatory** to fill the cooling system before bleeding.
Fill **both** the circuits for high and low-temperature coolant circuits.

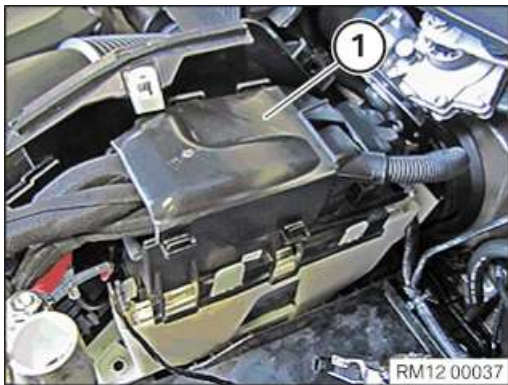
- See additional information.

Additional Information

Overview of Tightening Torques

Coolant pump to component carrier			Used in step	17
M6x20		Tightening torque		10 Nm
Coolant line to coolant pump/cylinder head			Used in step	18
M6x20		Tightening torque		8 Nm
Alternator to holder			Used in step	20
M10x125/M10x75		Tightening torque		38 Nm
Positive battery cable to alternator			Used in step	20
M8		Tightening torque		19 Nm
Wheel arch cover			Used in step	23
Screw		Tightening torque		2,6 Nm
Plastic nut		Tightening torque		2,6 Nm
Underbody protection to body			Used in step	24
Screw		Tightening torque		2.5 Nm
Brake disc to front wheel hub			Used in step	25
M8		Tightening torque		16 Nm
Brake disc to rear wheel hub			Used in step	25
M8		Tightening torque		16 Nm
Wheel bolts			Used in step	25
M14 / SW17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim.	Tightening torque		140 Nm
	Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence.	Check		140 Nm
	Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.			
Electrical servomotor to cylinder head			Used in step	26
M6		Tightening torque		8 Nm





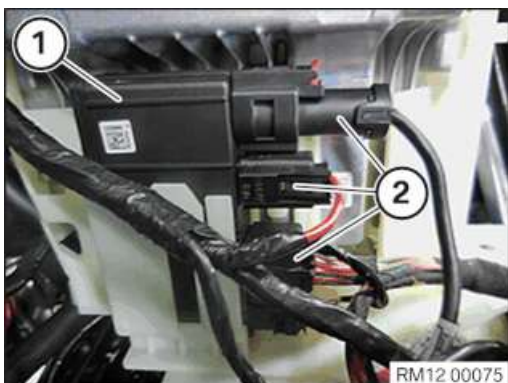
Unclip and remove cover (1).



Unlock and disconnect all connectors (1) on control unit.



Remove partition wall (1).



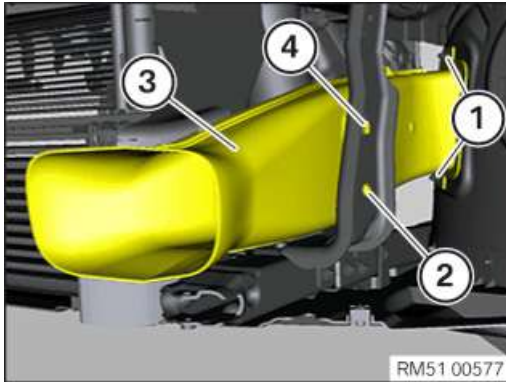
Unlock and pull off all connectors (2) from power distribution box (1).





NOTICE

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



- Loosen the expanding rivet (1).
- Loosen screw (2).
- Thread out and remove the air duct (3) from the guide (4).

9 – Drain the coolant from the coolant circuit



WARNING

Hot fluids.

Risk of scalding!

- Conduct all work in the vehicle wearing appropriate personal protective equipment only.



TECHNICAL INFORMATION

Life-long fill of coolant!

Do not reuse used coolant.

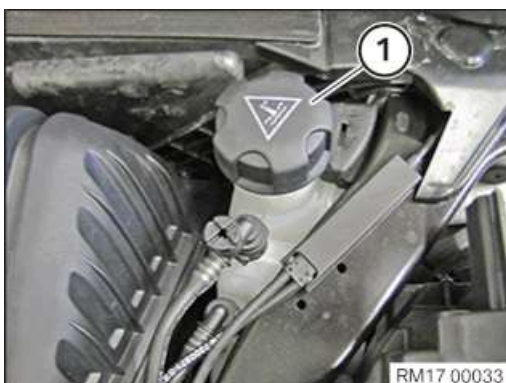
When replacing and removing components which rely on the corrosion protection effect of the coolant, it is essential to change the coolant. The cooling system must therefore be emptied and refilled.

In the case of other removal work involving the draining of part quantities of coolant, the coolant level must be topped up with new coolant.



TECHNICAL INFORMATION

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



- Loosen sealing cap (1).





WARNING

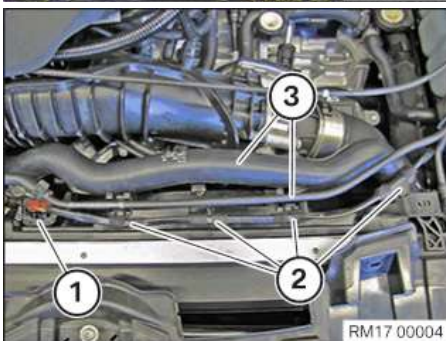
Hot surfaces.

Risk of burning!

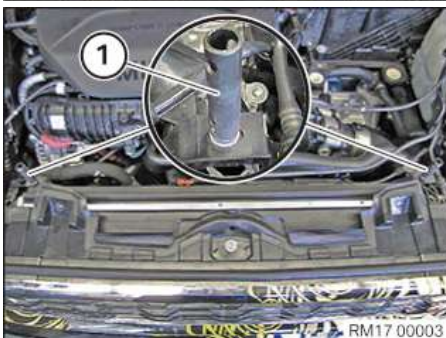
- Perform all work only on components that have cooled down.



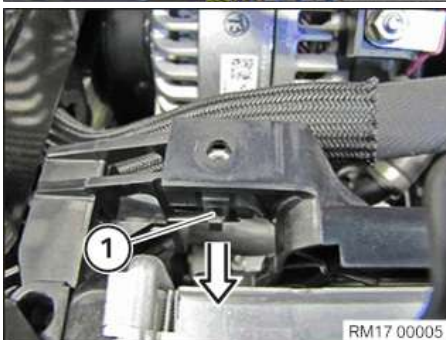
- Remove the sealing (1) from the radiator.



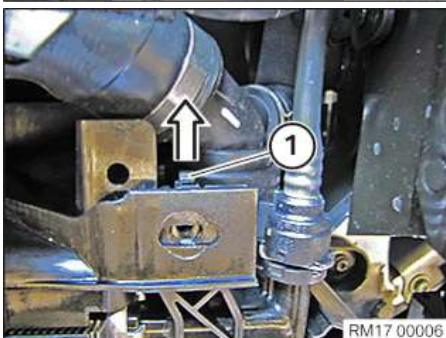
- Unlock plug connection (1) and disconnect.
- Unlock and loosen the clamps (2).
- Feed out connector (1) and place to one side.
- Feed out coolant lines (3) and lay to one side.



- Loosen screws (1).



- Unlock the right lock (1) on the fan cowl in the direction of the arrow.



- Unlock the left lock (1) on the fan cowl in the direction of the arrow.

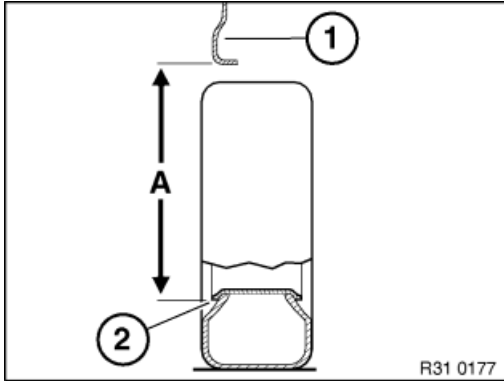


33 53 ... Measuring vehicle ride height



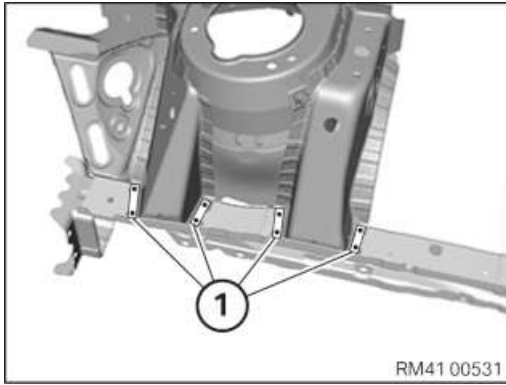
Necessary preliminary tasks:

- Move vehicle into normal position.



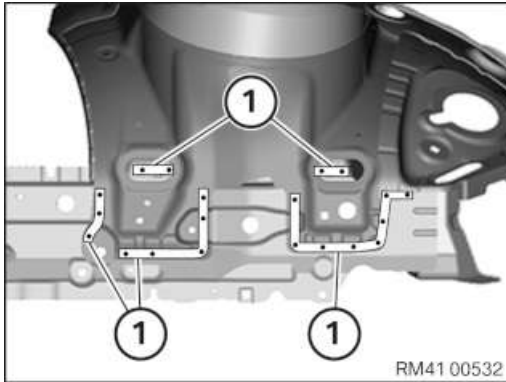
Determine actual ride height (A) - to do so, attach tape measure to rim flange (2) at bottom middle and measure to wheel arch cover (1).





Centre-punch welded connections in areas (1) and drill through with $\varnothing 6.8$ mm drill. Remove the remaining areas of the welded connections, which were not removed with the drill, from the inside of the engine support by grinding them off. *Note:*

The new part is joined in areas (1) by adhesive riveting. The bore holes in areas (1) are required for fitting the blind rivets. $\varnothing 6.8$ mm bore holes are transferred to the engine support when adjusting the new part.

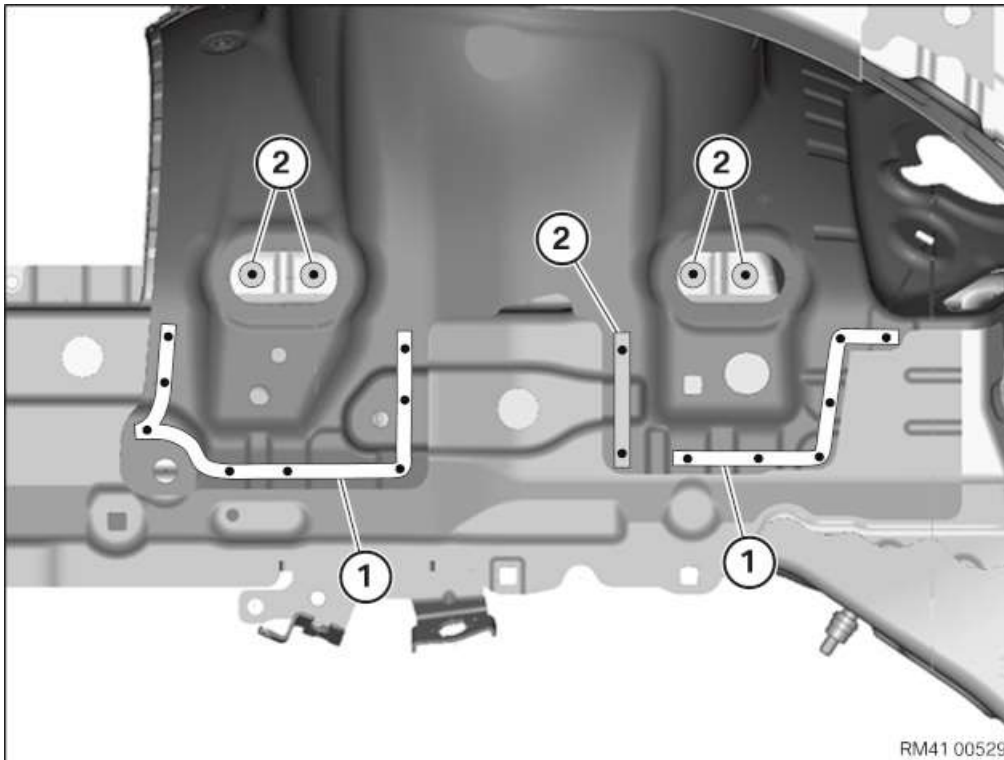


Centre-punch welded connections in areas (1) and drill through with $\varnothing 6.8$ mm drill.

Remove the remaining areas of the welded connections, which were not removed with the drill, from the inside of the engine support by grinding them off.

Note:

The new part is joined in areas (1) by adhesive riveting. The bore holes in areas (1) are required for fitting the blind rivets. $\varnothing 6.8$ mm bore holes are transferred to the engine support when adjusting the new part.



Adjust new parts to fit with alignment bracket or universal mount and secure.

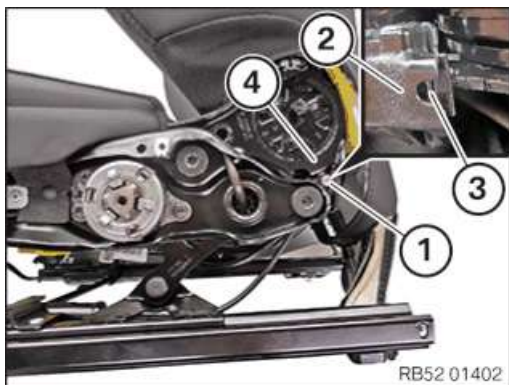
Transfer $\varnothing 6.8$ mm bore holes to engine support in areas (1) and (2).



Note: Carry out work on the right side in the same way as for the left side illustrated here.

**Necessary preliminary work:**

- Remove front driver's seat
- Remove outer cover on front seat

**Removal:**

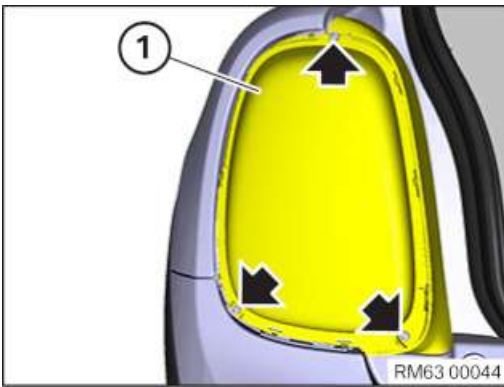
Release screw (1) on the seat (4).

Feed Bowden cable with adjusting mechanism (2) out of the backrest adjustment (3).



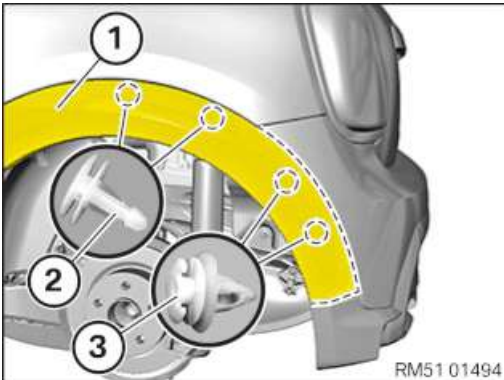
Unclip Bowden cable (1) in the marked area.

**Installation:**



- Loosen screws.
- Remove rear light (1) towards rear.
- Unlock associated plug connection and disconnect.

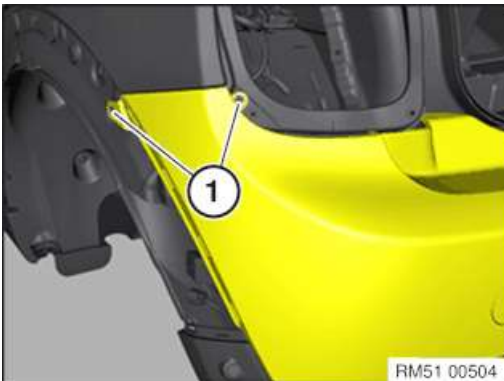
2 – Remove rear bumper panel



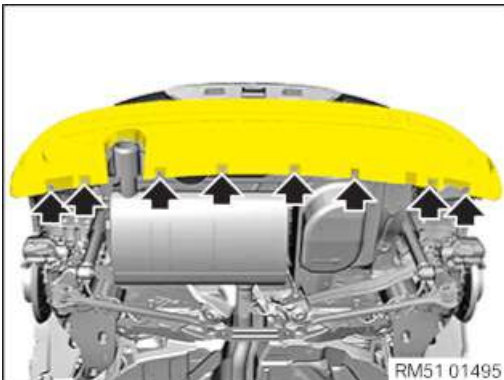
NOTICE

Perform the operations on the left and right side.

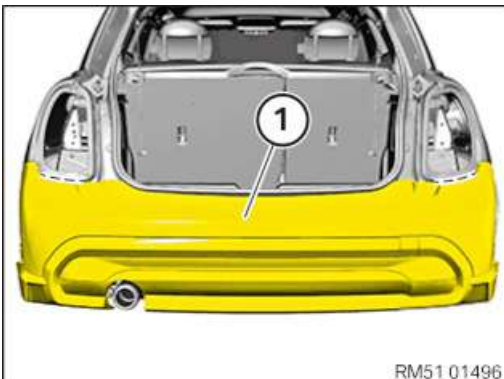
- Detach wheel arch trim (1) at the latch mechanisms along the dashed line.
- Detach wheel arch trim (1) at the clips (2) and (3).



- Release the bolts (1) on left and right.



- Release all bolts (arrows).



- Unfasten bumper panel (1) from the latch mechanisms in the area of the dashed lines.
- Remove the bumper panel (1) with the help of an auxiliary person.
Unlock and disconnect the plug connections for the rear fog lights and ultrasonic sensors.

