

12 61 280 Removing and installing/replacing oil pressure switch

PRELIMINARY WORK

1 – Removing the acoustic cover



WARNING

Hot surfaces.

Risk of burning!

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



RISK OF DAMAGE

Damage to the acoustic cover.

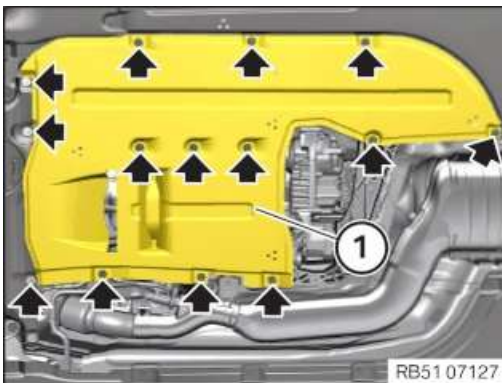
Jerky movements during disassembly and excessive application of force during installation may result in breakage of the acoustic cover.

- Disassemble or mount the acoustic cover carefully.
- Disassemble or mount snap-lock couplings of the ball pivots one after the other.
- Disassemble or mount acoustic cover only at temperatures $>20^{\circ}\text{C}$.
- Use only distilled water as an auxiliary material during installation, no lubricants.



- Unclip the acoustic cover (1) from the holders in the **marked** areas towards the top.

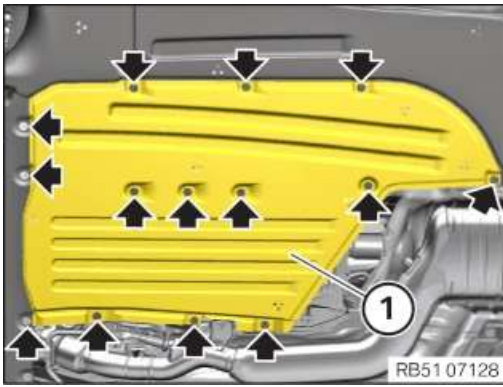
2 – Remove rear underbody protection



- **Version 1:**

Remove screws (arrows).

Feed out the rear underbody protection (1).

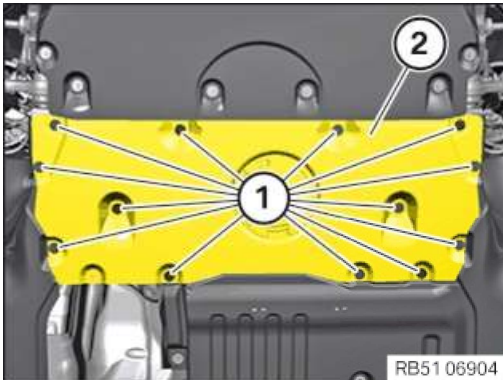


- **Version 2:**

Remove screws (arrows).

Guide out rear underbody protection (1) and remove it.

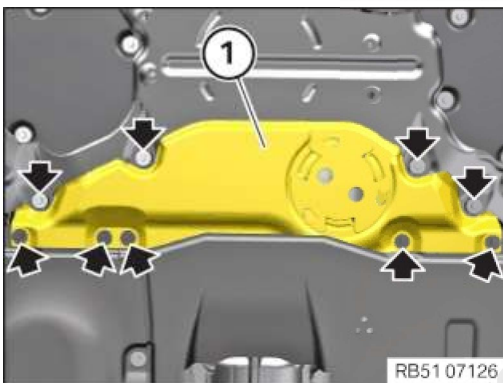
3 – Removing the centre underbody protection



- **Version with rear-wheel drive:**

Loosen screws (1).

Remove centre underbody protection (2) .



- **Version with all-wheel drive:**

Remove screws (arrows).

Feed out and remove the centre underbody protection (1).

MAIN WORK

4 – Removing the oil pressure switch



WARNING

Hot surfaces.

Risk of burning!

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



RISK OF DAMAGE



Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

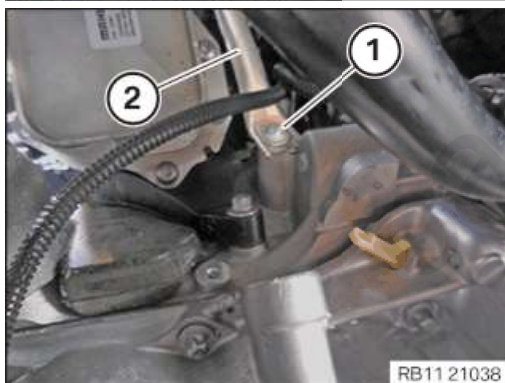
i

TECHNICAL INFORMATION

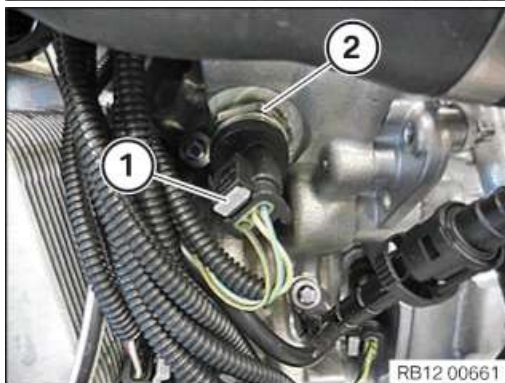
Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Loosen screw (1).

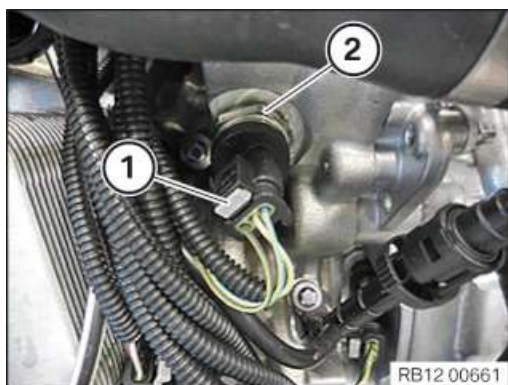


- Loosen screw (1).
- Guide out and remove manifold support (2).



- Unlock and loosen connector (1).
- Release and remove the oil pressure switch (2) with the special tool [0 496 106 \(11 8 720\)](#).
- Catch and dispose of emerging engine oil.

5 – Installing the oil pressure switch

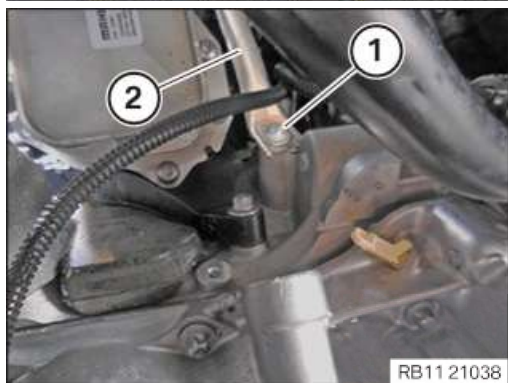


- Guide in and install oil pressure switch (2).
- Tighten oil pressure switch (2) with the special tool [0 496 106 \(11 8 720\)](#).

Oil pressure switch to crankcase

Sensor		Tightening torque	16,5 Nm
--------	--	-------------------	---------

- Connect and lock the connector (1).
The connector (1) must engage audibly.



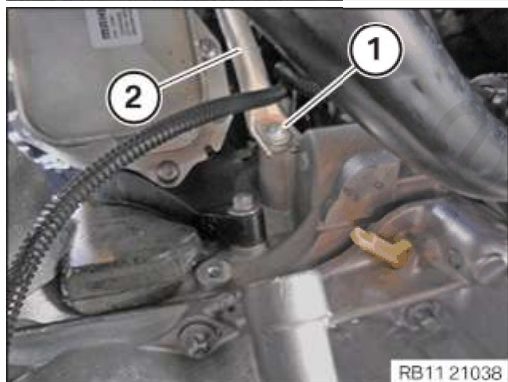
- Guide in and position manifold support (2).
- Hand-tighten the bolts (1).



- Tighten the screws (1).

Manifold support to intake plenum

M6x25		Tightening torque	8 Nm
-------	--	-------------------	------



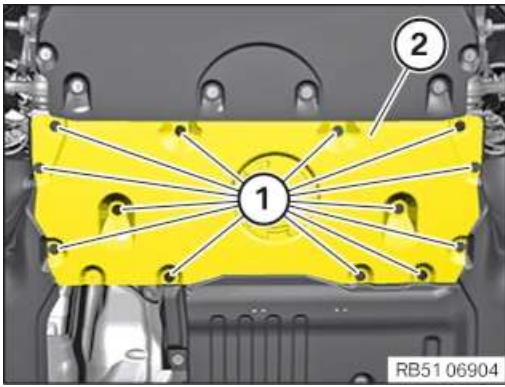
- Tighten screws (1) on manifold supports (2).

Manifold support to crankcase

M6x16		Tightening torque	8 Nm
-------	--	-------------------	------

POSTPROCESSES

6 – Installing the centre underbody protection



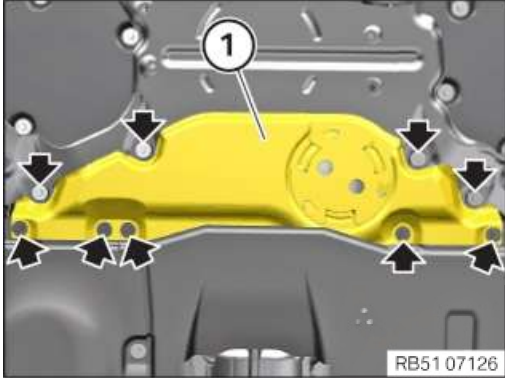
- **Version with rear-wheel drive:**

Position central underbody protection (2).

Tighten the screws (1).

Underbody protection

Hexagon screw		Tightening torque	3 Nm
---------------	--	-------------------	------



- **Version with all-wheel drive:**

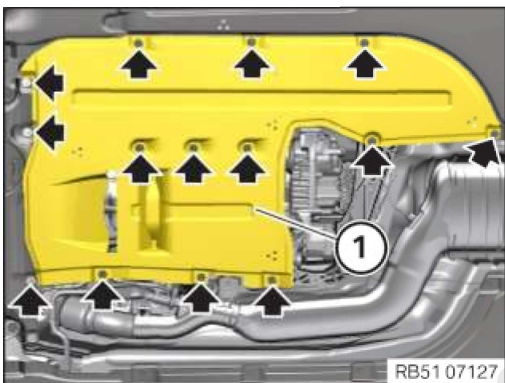
Guide in and install the centre of underbody protection (1).

Tighten screws (arrows).

Underbody protection

Hexagon screw		Tightening torque	3 Nm
---------------	--	-------------------	------

7 – Installing underbody protection at rear



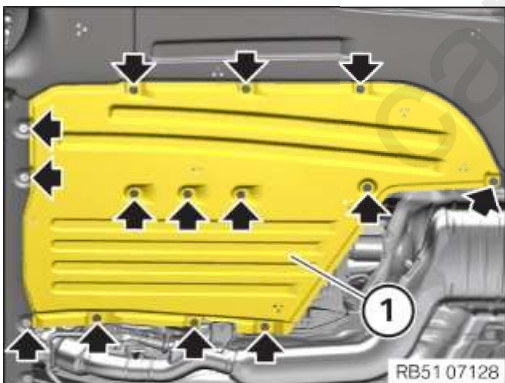
- **Version 1:**

Insert and install the rear underbody protection (1).

Tighten screws (arrows).

Underbody protection

Hexagon screw		Tightening torque	3 Nm
---------------	--	-------------------	------



- **Version 2:**

Insert and install the rear underbody protection (1).

Tighten screws (arrows).

Underbody protection

Hexagon screw		Tightening torque	3 Nm
---------------	--	-------------------	------

8 – Install acoustic cover

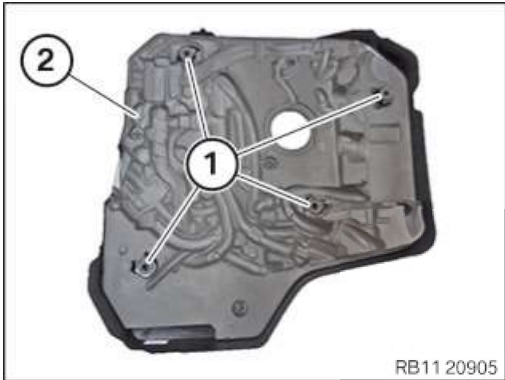


RISK OF DAMAGE

Damage to the acoustic cover.

Jerky movements during disassembly and excessive application of force during installation may result in breakage of the acoustic cover.

- Disassemble or mount the acoustic cover carefully.
- Disassemble or mount snap-lock couplings of the ball pivots one after the other.
- Disassemble or mount acoustic cover only at temperatures >20 °C.
- Use only distilled water as an auxiliary material during installation, no lubricants.



- Check all rubber mounts (1) of acoustic cover (2) for correct seating.



- Clip in the acoustic cover (1) into the holders in the **marked** areas.
The acoustic cover (1) must audibly engage into place.

9 – Check engine oil level

- Park vehicle on a horizontal surface.
- In the case of automatic transmission, shift to selector lever position N or P.
- Accelerator pedal is not pressed.
- Engine is running and is at operating temperature.
- Read off the engine oil level in the instrument cluster (KOMBI) or on the control display.
- Top up engine oil if necessary.

Additional Information

Overview of Tightening Torques

Oil pressure switch to crankcase			Used in step	5
Sensor		Tightening torque		16,5 Nm
Manifold support to intake plenum			Used in step	5
M6x25		Tightening torque		8 Nm

Manifold support to crankcase			Used in step	5
M6x16		Tightening torque	8 Nm	

Underbody protection			Used in step	67
Hexagon screw		Tightening torque	3 Nm	

Overview of Special Tools

0 496 106 (11 8 720) Socket WAF 46



Common		Used in step	45
Usage	(Long socket SW24) For removal and installation of oil pressure sensor. (Stahlwille or HAZET)		
Included in the tool or work			
Storage location	C20		
Replaced by			
In connection with			
SI-Number	01 04 07 (352)		

Overview Technical Data

12 61 285 Replacing engine oil level sensor



WARNING

Hot fluids.

Risk of scalding!

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



WARNING

Hot surfaces.

Risk of burning!

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



RISK OF DAMAGE

Contaminant or foreign body.

Contamination can result in malfunctions, operating failure or leaks.

- Adhere to the utmost cleanliness.
- Protect components from contamination e.g. by covering.
- Close off line connections with seal plugs.



RISK OF DAMAGE

Engine damage caused by excessively filling the engine with engine oil.

Filling an excessive quantity of engine oil may cause engine damage.

- Observe the exact engine oil filling capacity.
- Drain the engine oil.



TECHNICAL INFORMATION

Make sure the vehicle is at operating temperature for engine oil service (engine oil temperature > 70 °C).

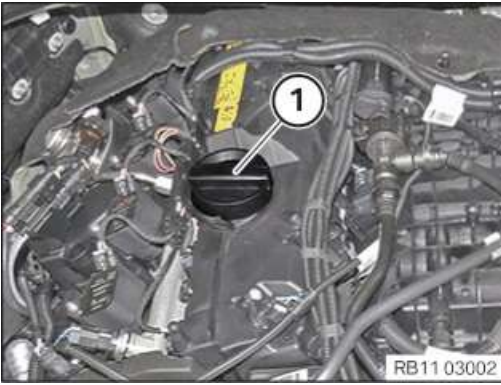


TECHNICAL INFORMATION

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

PRELIMINARY WORK

1 – Removing the oil filler cap



- Open oil filler cap (1).

2 – Releasing the oil drain plug



WARNING

Hot fluids.

Risk of scalding!

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

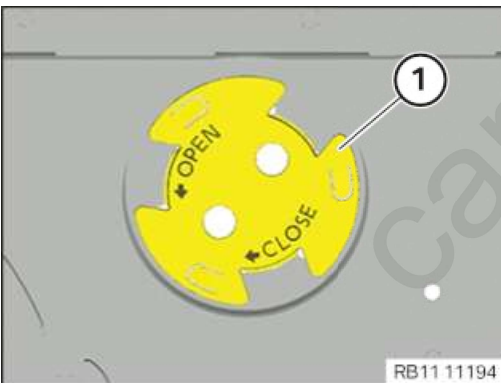


WARNING

Hot surfaces.

Risk of burning!

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



- Turn and remove service cap (1).



- Open oil drain plug (1) from the oil sump.

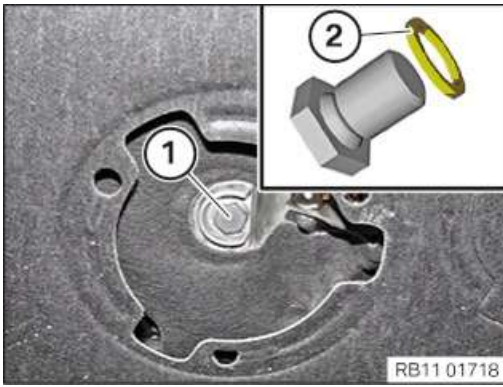


TECHNICAL INFORMATION

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

- Allow the engine oil to drain out fully.

3 – Tightening the oil drain plug



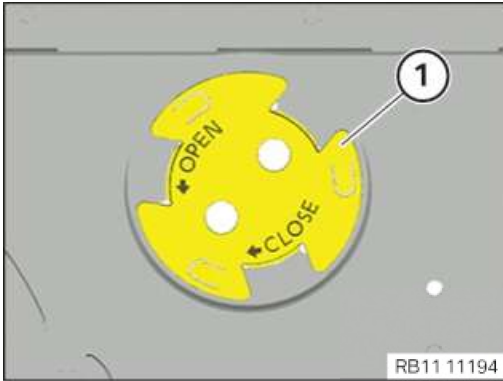
- Renew sealing ring (2).

Parts: Sealing ring

- Position oil drain plug (1) on the oil sump and tighten.

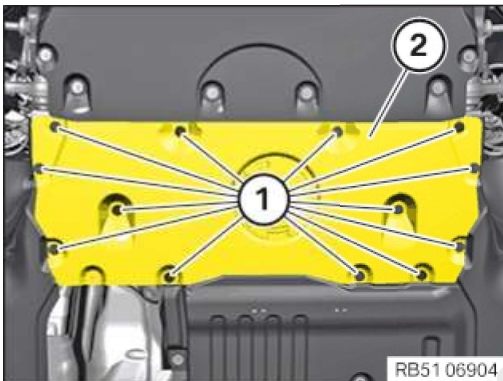
Oil drain plug

M12x16	Renew the sealing ring.	Tightening torque	25 Nm
--------	-------------------------	-------------------	-------



- Install service cap (1).

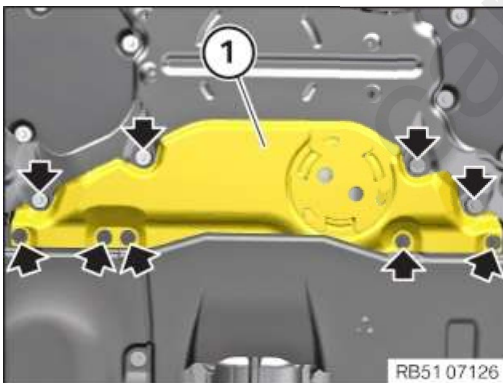
4 – Removing the centre underbody protection



- **Version with rear-wheel drive:**

Loosen screws (1).

Remove centre underbody protection (2) .



- **Version with all-wheel drive:**

Remove screws (arrows).

Feed out and remove the centre underbody protection (1).

MAIN WORK

5 – Removing the oil-level sensor



WARNING

Hot surfaces.

Risk of burning!

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



RISK OF DAMAGE



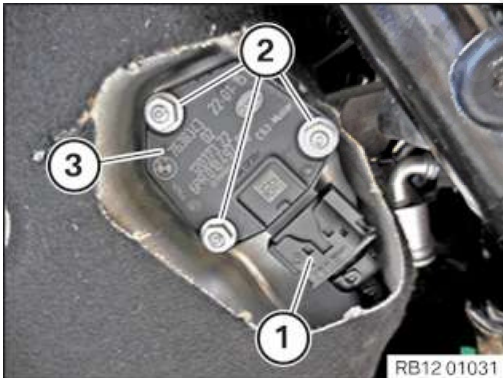
Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

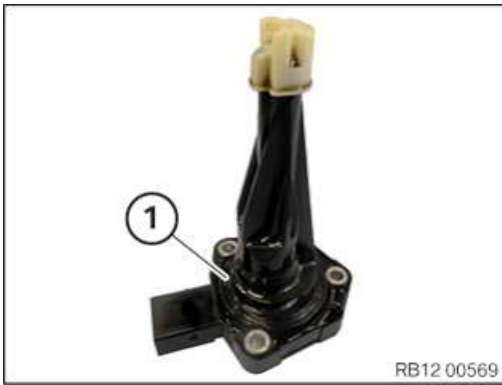


- Loosen cover (1).



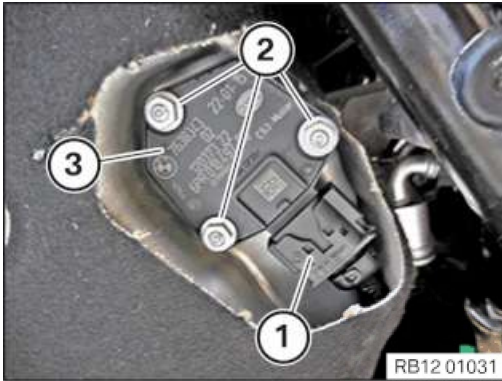
- Unlock plug connection (1) and disconnect.
- Release nut (2).
- Remove oil-level sensor (3).

6 – Installing the oil-level sensor



- Renew sealing ring (1).

Parts: Sealing ring



- Install the oil-level sensor (3).
- Tighten nuts (2).

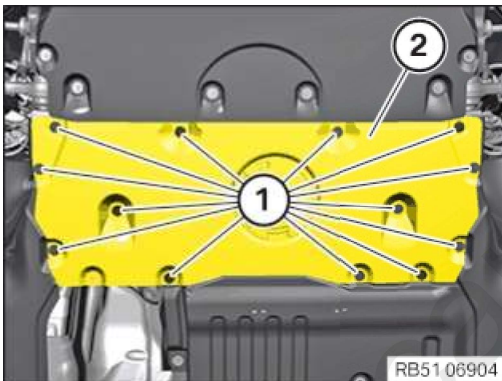
Oil level sensor to oil sump

M6 hexagon nut		Jointing torque	2 Nm
		Tightening torque	8,5 Nm

- Connect connectors (1) and lock.
The connector (1) must engage audibly.
- Check the oil-level sensor (3) for tightness.

POSTPROCESSES

7 – Installing the centre underbody protection



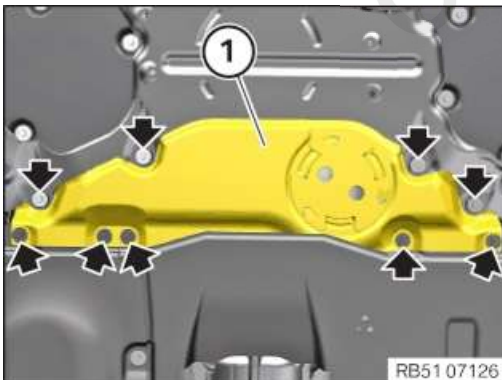
- **Version with rear-wheel drive:**

Position central underbody protection (2).

Tighten the screws (1).

Underbody protection

Hexagon screw		Tightening torque	3 Nm
---------------	--	-------------------	------



- **Version with all-wheel drive:**

Guide in and install the centre of underbody protection (1).

Tighten screws (arrows).

Underbody protection

Hexagon screw		Tightening torque	3 Nm
---------------	--	-------------------	------

8 – Topping up the engine oil



RISK OF DAMAGE

Damage to the petrol particulate filter.

Vehicles equipped with a petrol particulate filter must be operated with low-ash engine oil only.

- Use [BMW Longlife-04](#) , [BMW Longlife-12 FE](#) or [BMW Longlife-17 FE+](#) engine oils or engine oils approved by BMW matching the same specifications only.
- For additional information see: Overview of approved engine oils for BMW Group engines.



RISK OF DAMAGE

Engine damage caused by excessively filling the engine with engine oil.

Filling an excessive quantity of engine oil may cause engine damage.

- Observe the exact engine oil filling capacity.
- Drain the engine oil.

- Pour in engine oil.

Engine oil B48B20O1/B46B20O1

Filling capacity, engine oil change
with oil filter element

5,25 l

Engine oil: Technically suitable engine oils for BMW Group engines

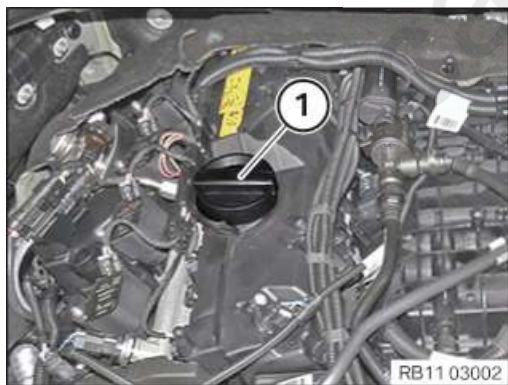
Engine oil

Filling capacity, engine oil change
with oil filter element

5,25 l

Engine oil: Technically suitable engine oils for BMW Group engines

9 – Installing the oil filler cap



- Close oil filler cap (1).

10 – Check engine oil level

- Park vehicle on a horizontal surface.
- In the case of automatic transmission, shift to selector lever position N or P.
- Accelerator pedal is not pressed.
- Engine is running and is at operating temperature.
- Read off the engine oil level in the instrument cluster (KOMBI) or on the control display.
- Top up engine oil if necessary.

Additional Information

Overview of Tightening Torques

Oil drain plug			Used in step 3
M12x16	Renew the sealing ring.	Tightening torque	25 Nm
Oil level sensor to oil sump			Used in step 6
M6 hexagon nut		Jointing torque	2 Nm
		Tightening torque	8,5 Nm
Underbody protection			Used in step 7
Hexagon screw		Tightening torque	3 Nm

Overview Technical Data

Engine oil B48B20O1/B46B20O1		Used in step	8
Filling capacity, engine oil change with oil filter element		5,25 l	
Engine oil: Technically suitable engine oils for BMW Group engines			
Engine oil		Used in step	8
Filling capacity, engine oil change with oil filter element		5,25 l	
Engine oil: Technically suitable engine oils for BMW Group engines			

Links

Repair instructions	Used in step
61 35 ... Notes on ESD protection (Electro Static Discharge)	5
Operating materials	Used in step
3.0 Technically appropriate engine oils for BMW Group engines	8