

Model: X5 sDrive40i

Development code: G05

Model code: CR43

Lead type: CR43

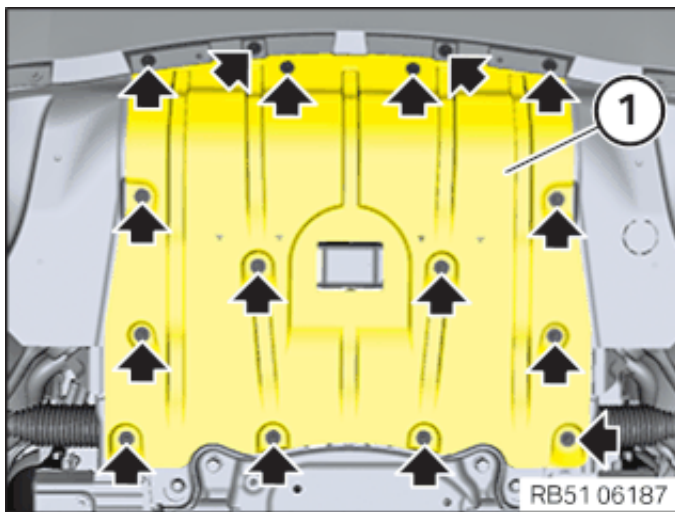
[Draining and topping up coolant for low temperature circuit »](#)

## Removing the front underbody protection

REP-TAT-P-5147-01-G05\_6

### **i** TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.



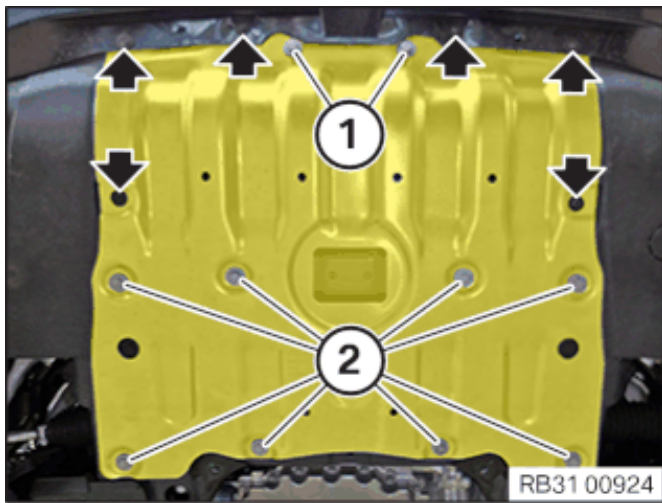
- Remove screws (arrows).
- Feed out and remove the front underbody protection (1).

### ► Removing the front skid plate



### NOTE

The following step(s) must be performed if the listed component(s) is/are installed.



## **i** TECHNICAL INFORMATION

Secure component against falling.

- Remove screws (arrows).
- Loosen screws (1) and (2).
- Feed out and remove the front skid plate.



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## Removing the stiffening plate

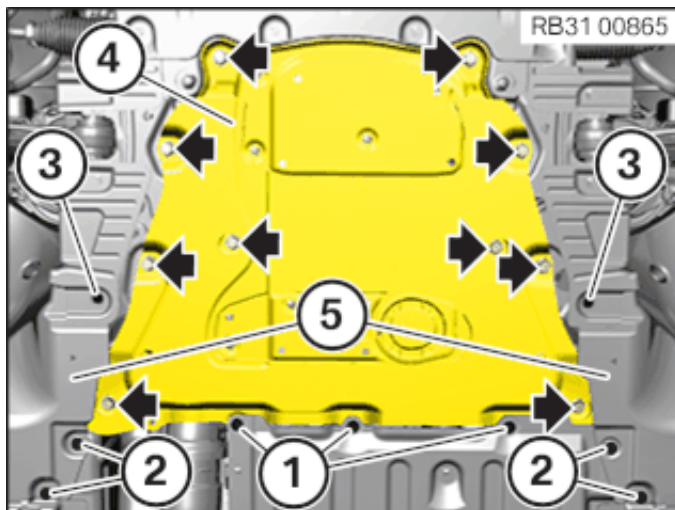
REP-TAT-P-3111-01-G05\_B58

### **i** TECHNICAL INFORMATION

Secure component against falling.

### **i** TECHNICAL INFORMATION

Driving without thrust field is not permissible.



- Loosen screws (1) to (3).
- Remove screws (arrows).
- Feed out and remove the thrust field (4) in the area (5) of the wheel arch trim panel.

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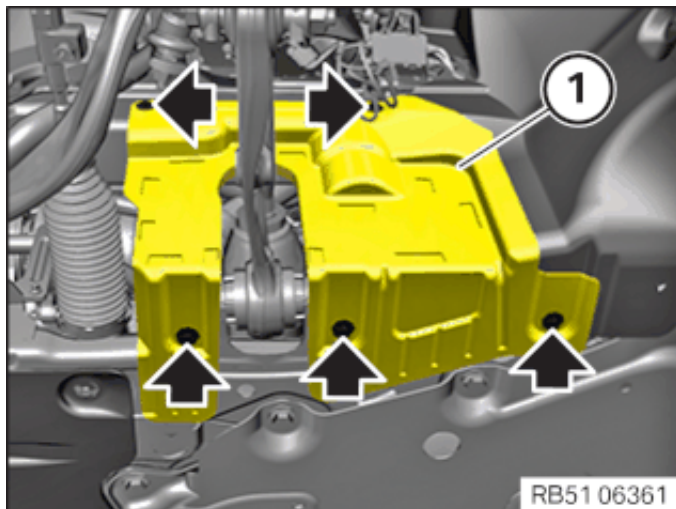
## Remove the cover of the steering assembly

REP-TAT-P-5175-01-G05



### NOTE

To provide a better overview: Schematic diagram with partially hidden components.



- Release all bolts (arrows).
- Remove cover (1).

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[Draining and topping up coolant for low temperature circuit »](#)

## Drain the coolant from the low-temperature cooling system

REP-TAT-P-1700-01-G05\_B58\_2

### WARNING

**Hot fluids.**

**Risk of scalding!**

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

### CAUTION

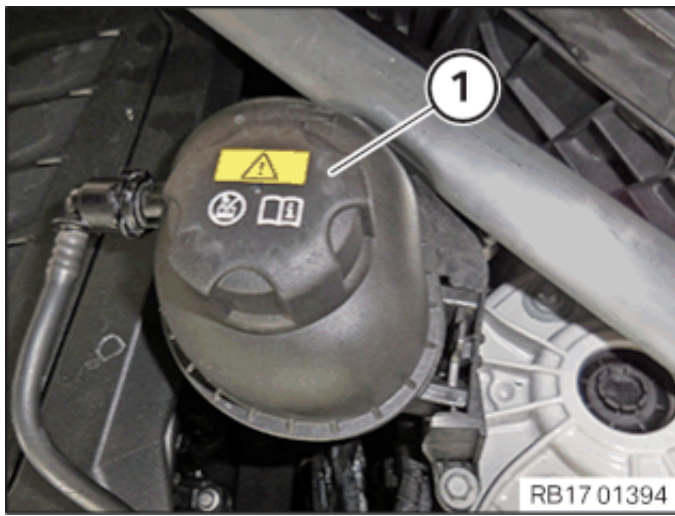
**Materials harmful to health.**

**Contact with fluids harmful to health!**

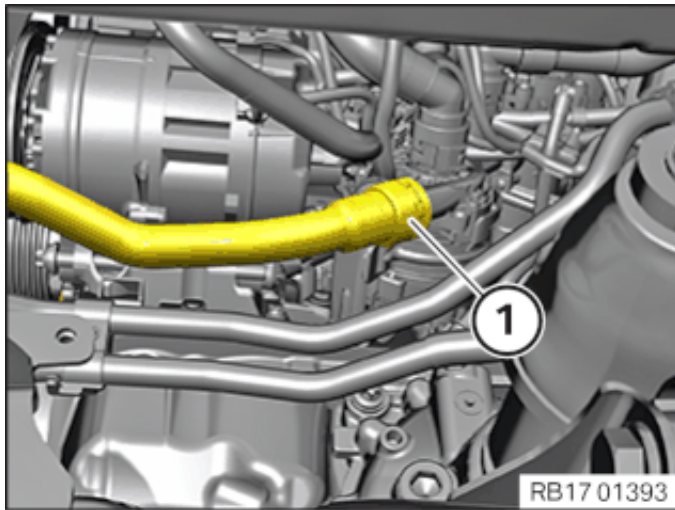
- Note and follow safety instructions on containers.
- Conduct all work in appropriate personal protective equipment only.

### TECHNICAL INFORMATION

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



- Open the lid (1) on the coolant expansion tank.



- Unlock the coolant hose (1) at the auxiliary coolant pump and detach it.
- Catch and dispose of leakage coolant.

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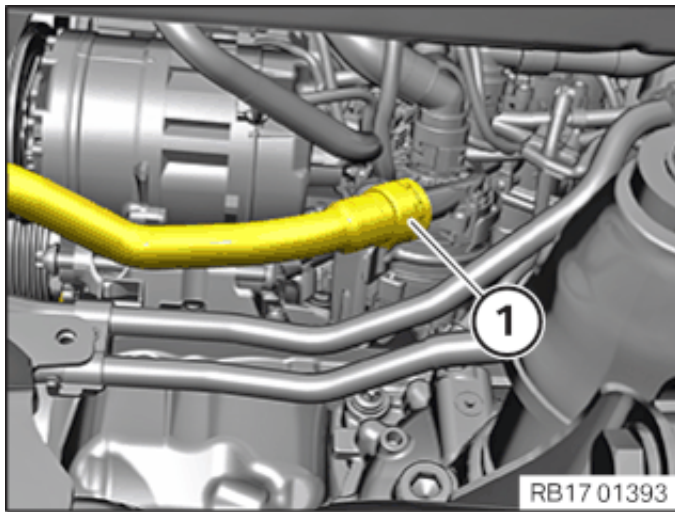
Lead type: CR43

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[Draining and topping up coolant for low temperature circuit »](#)

## Connecting the coolant line to the auxiliary coolant pump

REP-TAT-P-1710-07-G05\_B58\_2



- Connect the coolant line (1) to the auxiliary coolant pump and lock it audibly.

Model: X5 sDrive40i

Development code: G05

Model code: CR43

Lead type: CR43

[Draining and topping up coolant for low temperature circuit »](#)

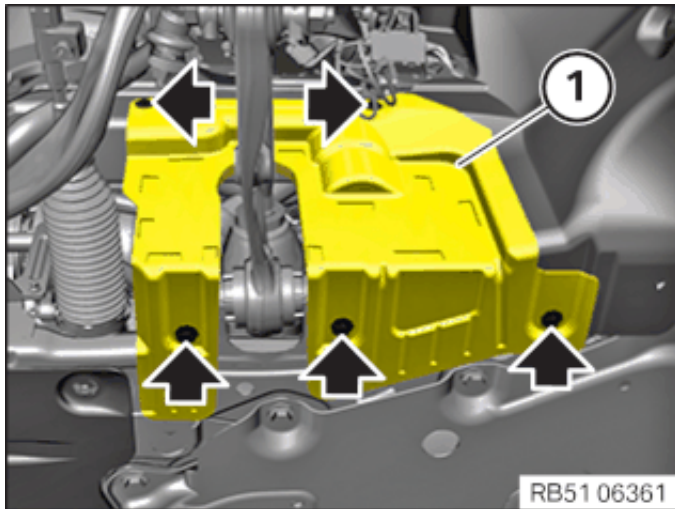
## Install the cover of the steering assembly

REP-TAT-P-5175-02-G05



### NOTE

To provide a better overview: Schematic diagram with partially hidden components.



- Insert the cover (1).
- Tighten all bolts (arrows).

### Tightening torques

#### Cover, steering unit

Thermoplastic  
hexagon screw

**Tightening torque**  
2.6Nm

Model: X5 sDrive40i

Development code: G05

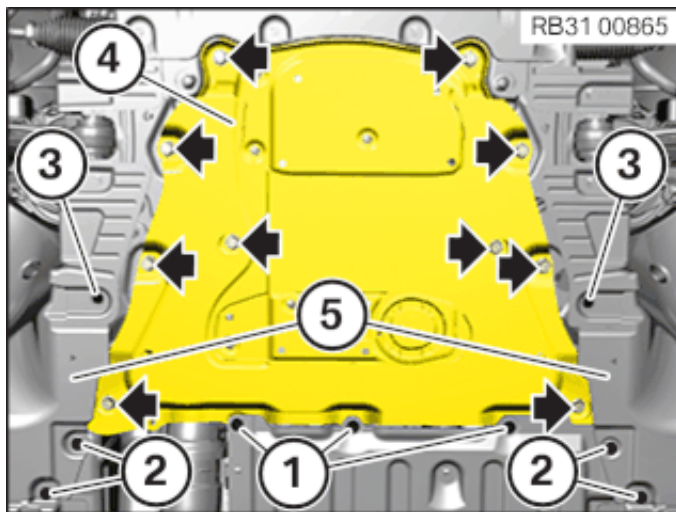
Model code: CR43

Lead type: CR43

[Draining and topping up coolant for low temperature circuit »](#)

## Install the stiffening plate

REP-TAT-P-3111-02-G05\_B58



- Feed in the thrust field (4) in the area (5) of the wheel arch trim panel and position it on the front subframe.

- Renew the bolts (arrows).

**Parts:** Screws

- Tighten screws (arrows).

### Tightening torques

#### Thrust field to front axle support

M10

Renew screws.

**Joining torque**

56Nm

**Angle of rotation**

90°

- Tighten down screws (3).

### Tightening torques

#### Cover, steering unit

Thermoplastic  
hexagon screw

**Tightening torque**

2.6Nm

- Tighten down screws (2).

## Tightening torques

### Wheel arch cover

Thermoplastic  
hexagon screw

**Tightening torque**  
2.6Nm

Plastic nut

**Tightening torque**  
2.6Nm

- Tighten down screws (1).

## Tightening torques

### Undershield/frame

Hexagon screw

**tightening torque**  
3Nm

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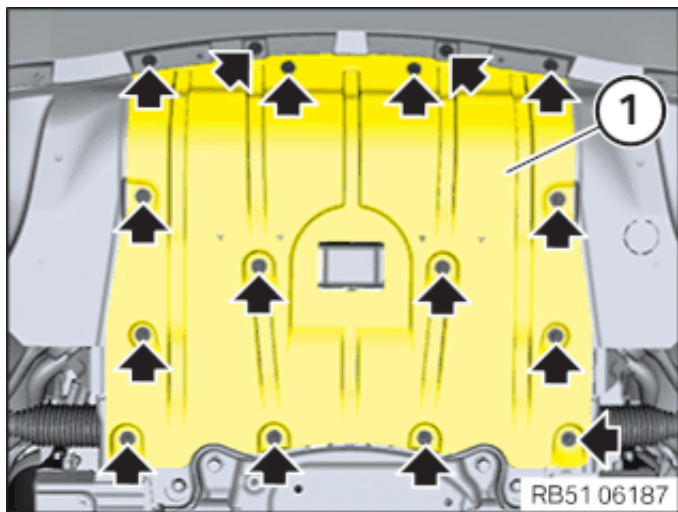
[Draining and topping up coolant for low temperature circuit »](#)

## Install front underbody protection

REP-TAT-P-5147-02-G05\_6

### **i** TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.



- Insert front underbody protection (1) and position correctly.
- Tighten screws (arrows).

### Tightening torques

#### Undershield/frame

Hexagon screw

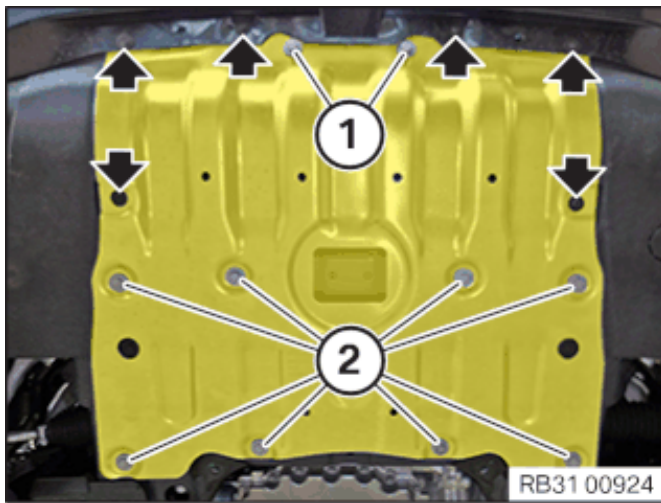
**tightening torque**  
3Nm

### ► Installing the front skid plate



### NOTE

The following step(s) must be performed if the listed component(s) is/are installed.



- Feed in and position the front skid plate.
- Tighten down screws (2) and (1).

### **Tightening torques**

#### **Skid plate at the front to front subframe**

M8

**Tightening  
torque**

19Nm

- Tighten screws (arrows).

### **Tightening torques**

#### **Undershield/frame**

Hexagon screw

**tightening  
torque**

3Nm



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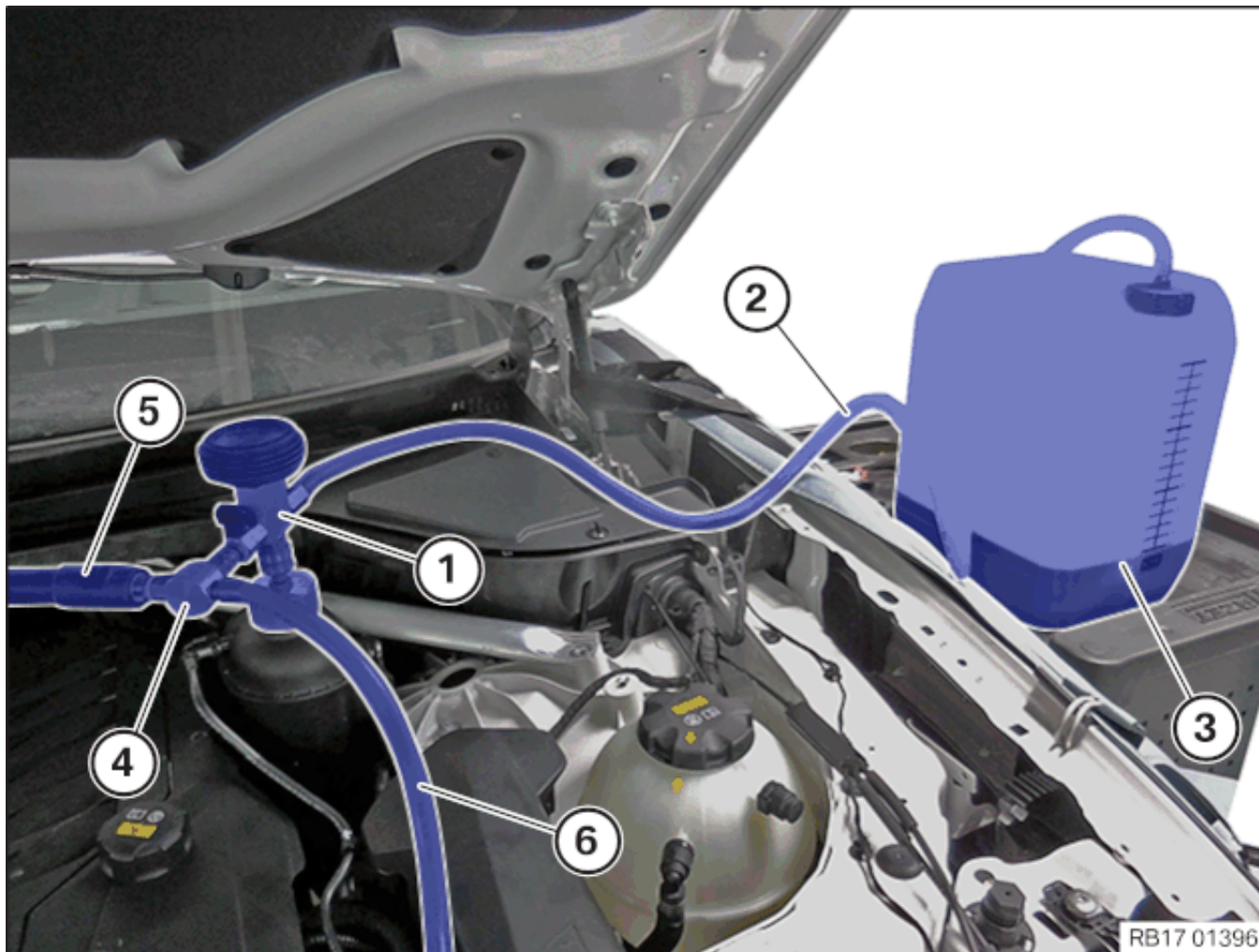
[Draining and topping up coolant for low temperature circuit »](#)

## Filling the low-temperature cooling system with the vacuum filling equipment

REP-TAT-P-1700-04-G05\_B58\_1

Further information is available.

### Vacuum filling equipment



Vacuum filler device - connected to the low-temperature coolant expansion tank

#### 1 Vacuum filling equipment with pressure gauge and shutoff valves

- 2 Filling hose
- 3 Fluid tank with coolant
- 4 Venturi nozzle
- 5 Compressed air connection (7 bar)
- 6 Exhaust hose (route exhaust hose into a collecting vessel)

## Precondition

The coolant expansion tank for the cooling system must be empty. The fluid tank of the vacuum filling equipment must have a sufficient quantity of premixed coolant, 1 l to 2 l more than the specified capacity for the vehicle. The fluid tank of the vacuum filling equipment must be positioned at the same height as the coolant expansion tank. The compressed air connection must have a pressure of 7 bar. Ignition is switched off.

The vacuum filling equipment must be functional and free of dirt.

### **i** TECHNICAL INFORMATION

Follow notes for repair work on the cooling system.

For additional information see:

Main group 17

17 00 Notes for repair work on the cooling system

### **i** TECHNICAL INFORMATION

#### **Immobilization period-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.

### **i** TECHNICAL INFORMATION

Mixing different coolants is not permitted.

## **i** TECHNICAL INFORMATION

Filling **without** the vacuum filling equipment (watering can filling) is **not permitted**.

If this is not observed, there is a risk of component damage or engine damage.

The filling specification **must** be observed.

It is essential to visually check the **vacuum filling equipment before use** to check that it is functioning correctly and clean.

It is not permissible to operate the vehicle if the filling procedure has not been fully completed. Otherwise there may be functional limitations (degradation) or overheating.

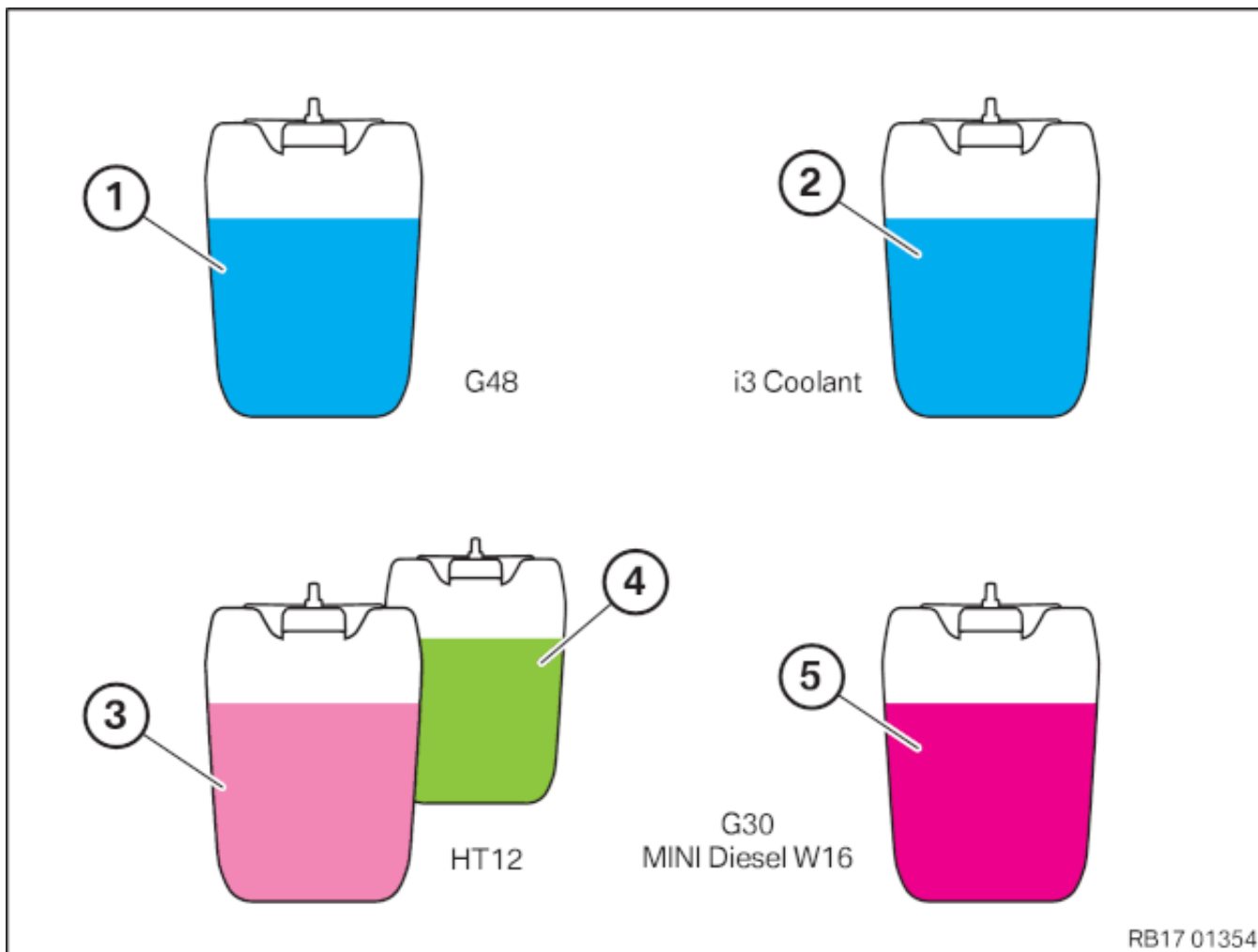
A bleeding procedure is required after a part has been exchanged in the cooling system and/or after refilling the cooling system.

## **i** TECHNICAL INFORMATION

Make sure that the ignition (terminal 15) is switched off prior to creating the vacuum with the vacuum filling equipment.

► **Not the type of coolant**

**Coolant in the collecting vessel of vacuum filler device**



Choose the correct coolant for filling.

In general, a vehicle has to be filled with the coolant with which it is delivered from the factory.

**1 G48 (Blue) (BMW LC-87)**

Must **not** be mixed with i3 Coolant or G30 MINI Diesel W16.

**2 i3 Coolant (Blue) (BMW LC-13)**

Is used only for heater circuit i3. i3 Coolant must **not** be added to other coolant circuits or mixed with other coolants.

**3 HT12 (Pink) (BMW LC-18)**

Must **not** be mixed with i3 Coolant or G30 MINI Diesel W16.

**4 HT12 (Green) (BMW LC-18)**

Must **not** be mixed with i3 Coolant or G30 MINI Diesel W16.

**5 G30 (Pink) (BMW LC-07)**

May be W16 used exclusively for the **MINI Diesel**. G30 must **not** be filled in the other coolant circuits or mixed with the other coolants.

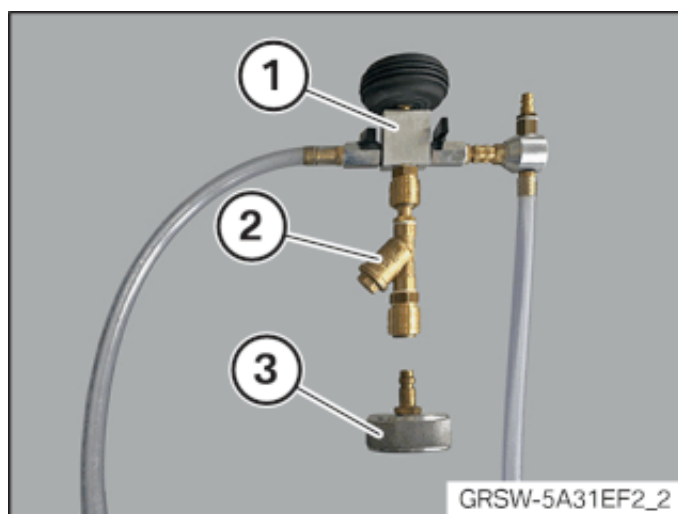


## RISK OF DAMAGE

**Damage to the engine or components in high-voltage vehicles**

## Using the incorrect coolant may lead to corrosion or gel formation in the coolant circuit.

- Only use coolant that has been approved for the specific vehicle.
- Only fill the vehicle with the coolant with which it was delivered ex works.
- Only mix compatible coolants. The color does not allow any statement about coolant compatibility.
- Selection of the correct coolant exclusively via the part number.



### **i** TECHNICAL INFORMATION

When using vacuum filling equipment to fill the coolant circuit, you must use **special tool 5 A31 EF2** (strainer) to protect the inside of the coolant circuit from contaminants.

- Connect special tool (2) **5 A31 EF2** to the vacuum filling equipment (1).
- Connect the special tool (2) with the appropriate adapter (3) from the set of special tools **0 494 417 (17 0 100)**.
- Select a suitable adapter (Y) from the set of special tools **0 494 417 (17 0 100)**:

| Type        | Engine                               | Adapter (Y)<br>from 17 0<br>100 |
|-------------|--------------------------------------|---------------------------------|
| G05/G06/G07 | B58B30M1 /<br>B57D30S0 /<br>B48B20O1 | <b>17 0 109</b>                 |
| G05/G06/G07 | B57 Mild hybrid<br>technology        | <b>17 0 109</b>                 |

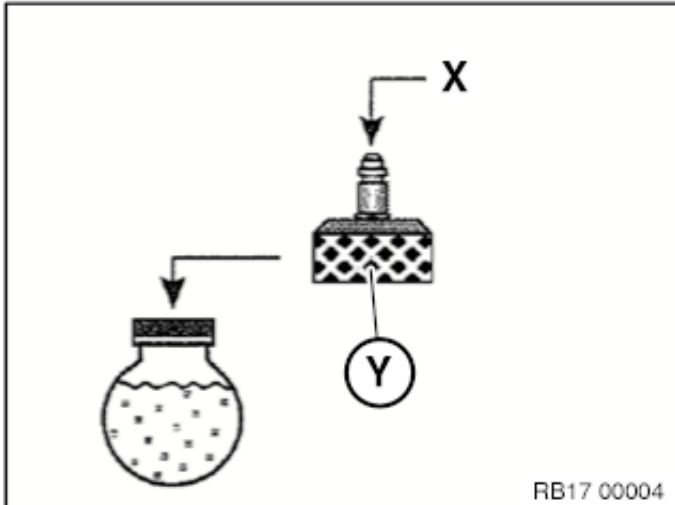
- Fill the fluid tank of the vacuum filling equipment with 1 l to 2 l more than the filling capacity of coolant specified for the vehicle.

## Technical data

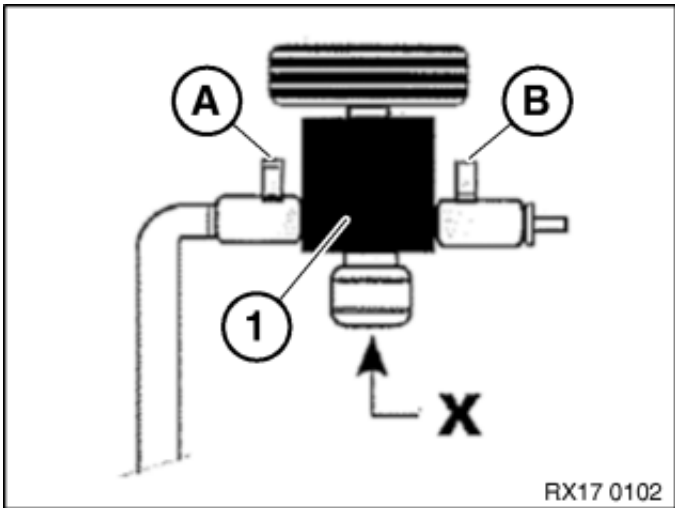
### Filling capacity of low-temperature coolant circuit G05/G06/G07/G18

**B58B30M1**

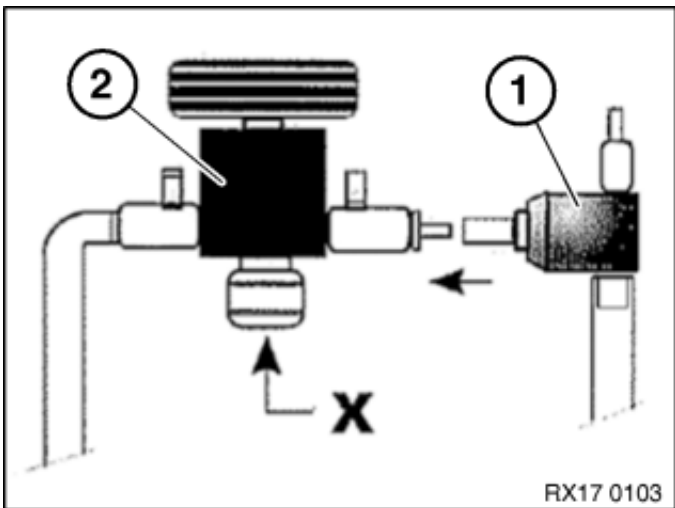
5.4 l



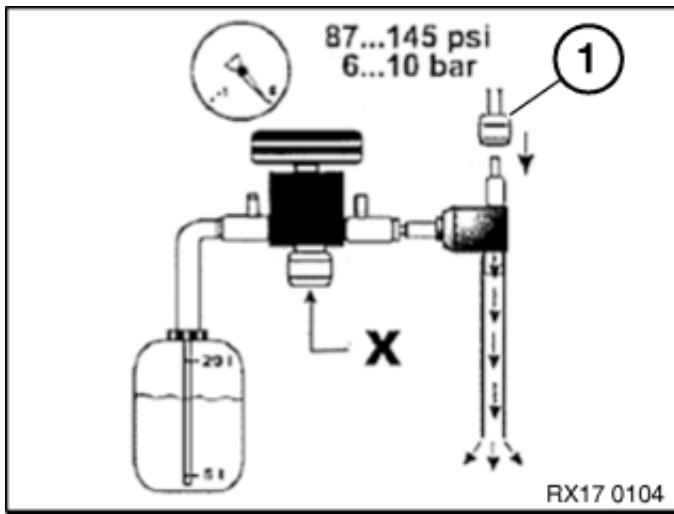
- Connect the selected adapter (Y) to the coolant expansion tank.
- Connect the vacuum filling equipment to the connection (X) of the adapter.



- Check whether both shutoff valves (A) and (B) of the vacuum filling equipment (1) are closed.
- Connect and lock connection (X) to the coolant expansion tank.

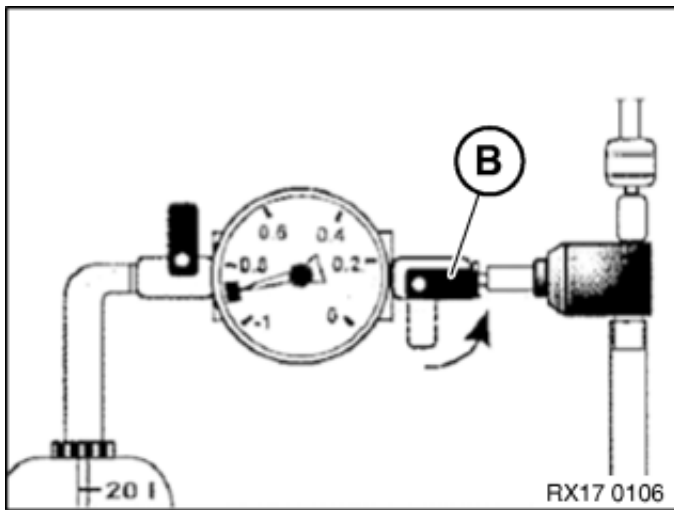


- Connect Venturi nozzle (1) to the vacuum filling equipment (2).
- (X) is the connection on the coolant expansion tank.



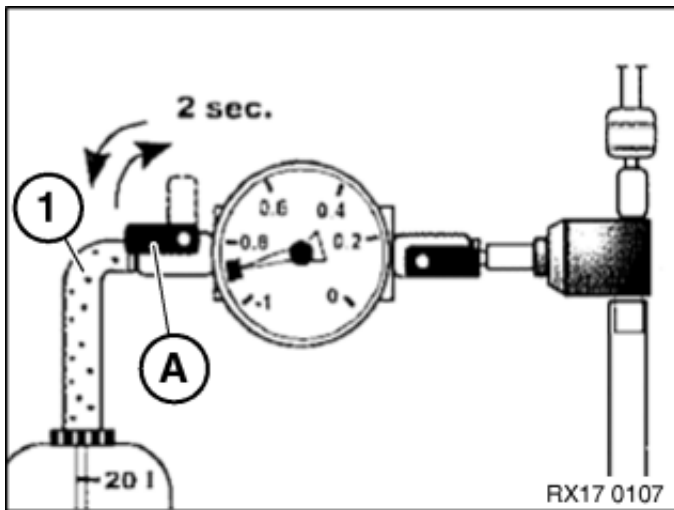
- Connect compressed air (1).

(X) is the connection on the coolant expansion tank.

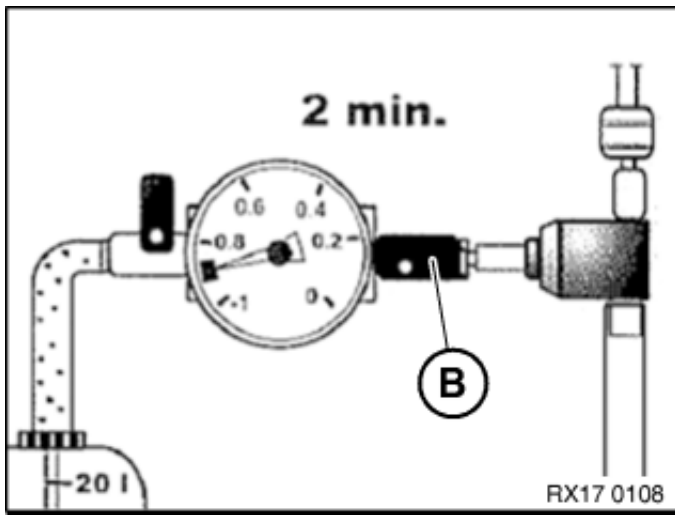


- Open shutoff valve (B).

The venturi nozzle generates a flow noise.



- Open shutoff valve (A) until the filling hose (1) is full without bubbles.
  - Close the shutoff valve (A) again.
- » The filling hose (1) has now been bled.

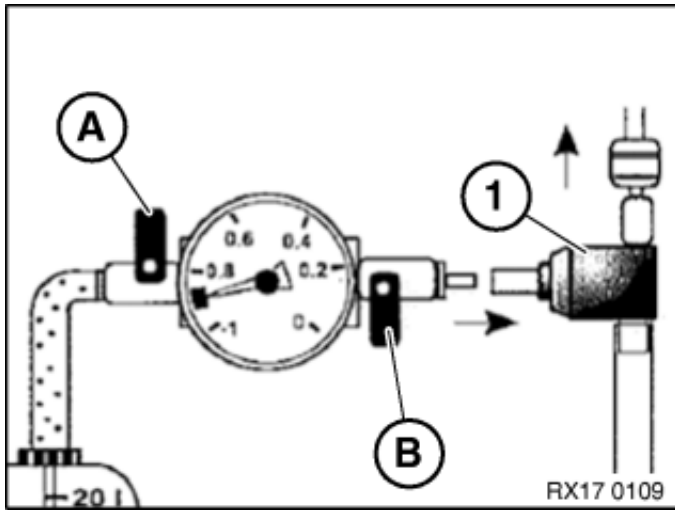


- Check the coolant hoses for porosity and, if necessary, renew them.

## i TECHNICAL INFORMATION

The coolant hoses contract during vacuum build-up.

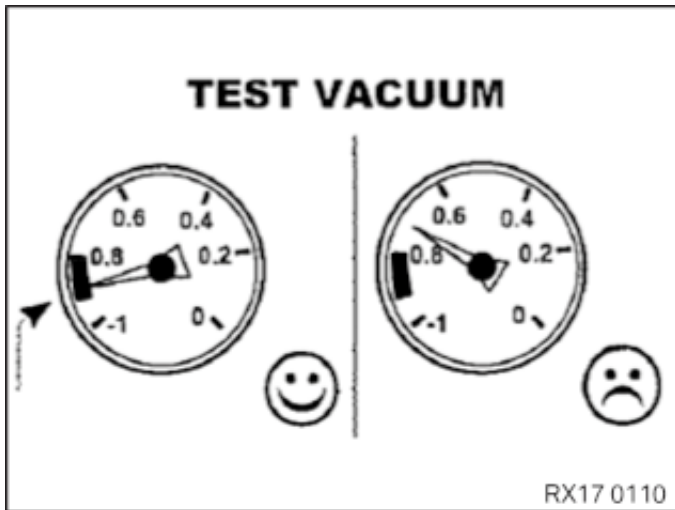
- After a vacuum of -0.8 to -0.95 bar is reached in the coolant circuit (approximate duration 2 minutes), close the shutoff valve (B).



- Check whether shutoff valves (A) and (B) are closed.
- Disconnect the Venturi nozzle (1).

## Check

- The vacuum in the coolant circuit must be maintained for at least 2 minutes.



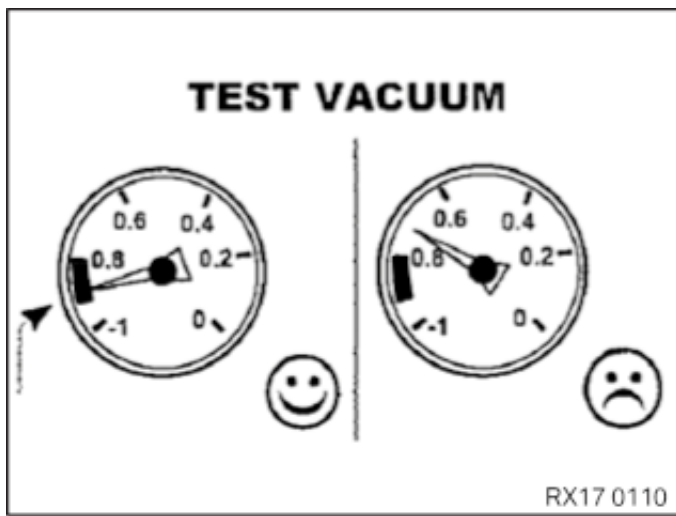
## Result

- » Vacuum drops.

## Measure

- Search for leaks, repair them, and start the filling procedure from the beginning.

## Check



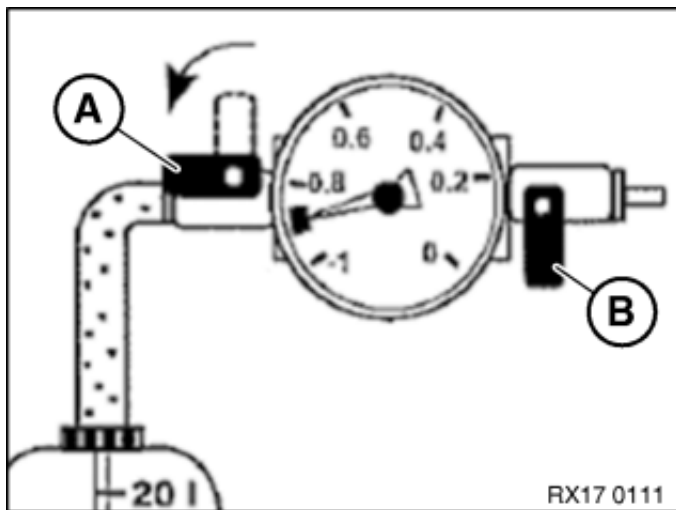
- The vacuum in the coolant circuit must be maintained for at least 2 minutes.

## Result

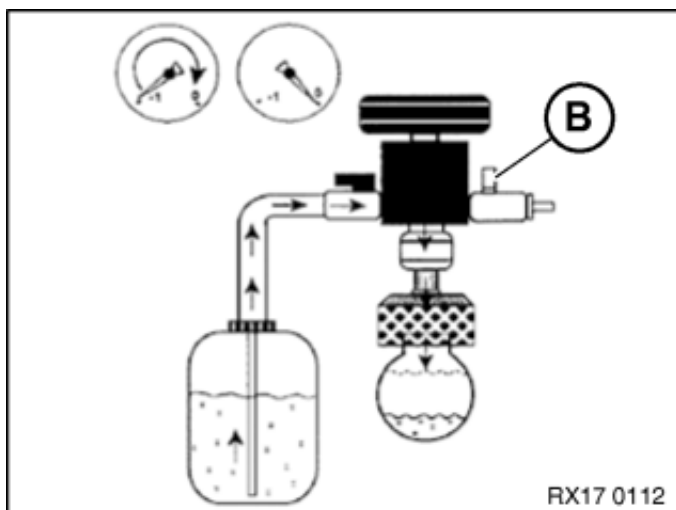
- » Vacuum remains constant.

## Measure

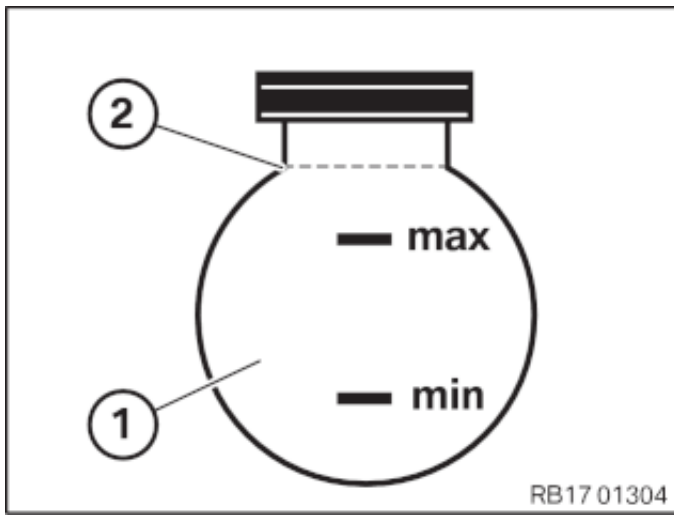
- Continue with filling.



- Keep shutoff valve (B) closed during the filling process.
- To fill the cooling system, open shutoff valve (A) to the fluid tank of the vacuum filling equipment.



- Stop the filling procedure when the needle in the pressure tester is on 0 bar or it no longer drops.
- If necessary, reduce remaining vacuum. To do so, open the shutoff valve (B).



- Remove the vacuum filling equipment with the adapter from the low-temperature coolant expansion tank (1).
- Equalize the coolant level in the low-temperature coolant expansion tank (1) to the lower edge of the coolant filler neck (2) in the low-temperature coolant expansion tank (1).
- After filling the engine cooling system using vacuum filling equipment, carry out the cooling system bleeding procedure **also**.

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[Draining and topping up coolant for low temperature circuit »](#)

## Venting the low-temperature cooling system

REP-TAT-P-1700-12-G05\_B58\_2

### **i** TECHNICAL INFORMATION

#### **Immobilization period-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.

### **i** TECHNICAL INFORMATION

Filling **without** the vacuum filling equipment (watering can filling) is **not permitted**.

If this is not observed, there is a risk of component damage or engine damage.

The filling specification **must** be observed.

It is essential to visually check the **vacuum filling equipment before use** to check that it is functioning correctly and clean.

It is not permissible to operate the vehicle if the filling procedure has not been fully completed. Otherwise there may be functional limitations (degradation) or overheating.

A bleeding procedure is required after a part has been exchanged in the cooling system and/or after refilling the cooling system.

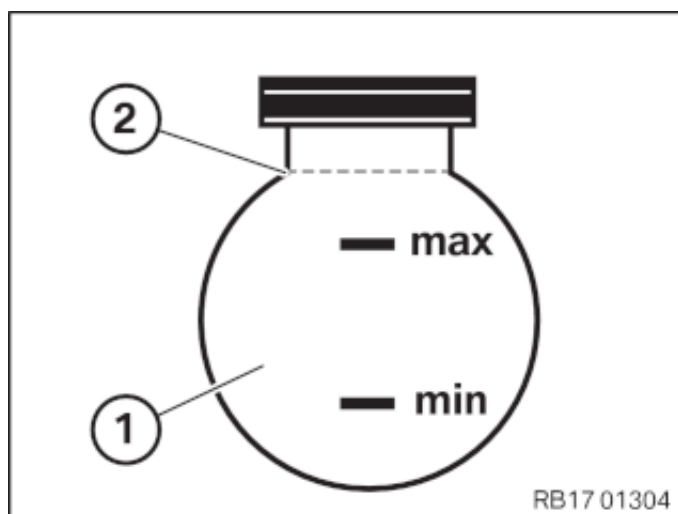
## **i** TECHNICAL INFORMATION

Before starting the automatic cooling system bleeding procedure, make sure that **all coolant circuits are filled**. If the cooling system bleeding procedure is started while one of the coolant circuits is empty, there is a risk of damage to the electric coolant pump when running it dry.

**Make sure that terminal 15 is not disconnected for the bleeding procedure.** Switch on low-beam headlights and hazard warning lights. If the low-beam headlights and hazard warning lights are not switched on, the ignition (terminal 15) will switch off automatically after a certain period of time and interrupt the bleeding procedure.

## **i** TECHNICAL INFORMATION

The driving dynamics control must not be set to the ECO PRO switch position.



- Adjust the coolant level in the low-temperature coolant expansion tank (1) to the lower edge (2) of the coolant filler neck of the low-temperature coolant expansion tank (1).
  - Close the sealing cap on the coolant expansion tank of the low-temperature coolant circuit.
  - Ensure that the hood is **open**.
  - Connect battery charger.
  - **Activate** testing-analysis-diagnosis (PAD) by quickly pressing the START-STOP button three times.
  - Activate the low beams and the hazard-warning lights **at the same time**.
- If the low beams and the hazard-warning lights are **not** turned on, the ignition (**terminal 15**) turns off automatically after a while and interrupts the bleeding procedure.
- Ensure that Driving Dynamics Control is **not** in the "ECO PRO" switch position.
  - Set the heating to the **maximum** temperature and the blower to the **lowest** level.

- Press the accelerator pedal up to the stop for at least **10 s** and do **not** press the brake pedal while doing this.
- Do **not** start the engine.

The cooling system bleeding procedure starts.

The electric coolant pump is activated in the low-temperature coolant circuit according to a cooling system bleeding procedure for 11 min.

The cooling system bleeding procedure is ended after 11 min.

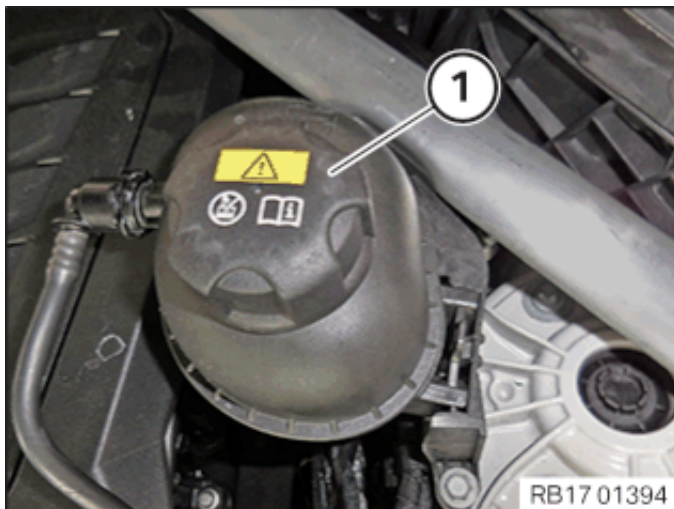
The electric coolant pump is **not** activated any longer.

- Observe the display in the instrument cluster (KOMBI).

If the service function is canceled, the cooling system bleeding procedure **must** be repeated.

- Let the coolant temperature cool down to **< 50°C**.

- Loosen sealing cap (1).



## **i** TECHNICAL INFORMATION

After the cooling system bleeding procedure, the cooling system is topped up via the maximum mark.

Overfilling the cooling system serves to balance the remaining air in the cooling system.

The normal fill level of the coolant is reached during driving.

- Adjust the fill level in the coolant expansion tank of the low-temperature coolant circuit to **50 ml** above the **maximum mark**.
- Close sealing cap (1).