

17 00 039

**Venting and filling
cooling system
with vacuum filling
unit****Special tools required:**

- [00 2 030](#)
- [17 0 100](#)

**Important!****Lifetime coolant filling:**

Never 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 drained and refilled.

In the case of other removal work involving the draining of part quantities of coolant, replace these quantities which have been drained with new coolant.

**Important!**

You must protect the alternator against contamination by coolant when carrying out repair work on the cooling circuit.

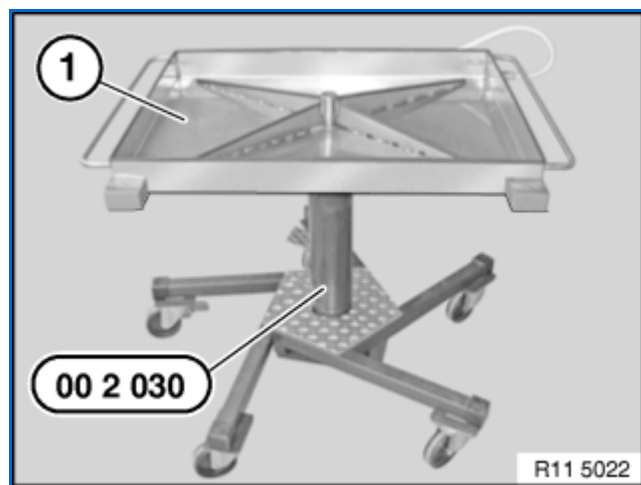
Cover alternator with suitable materials.

Failure to comply with this procedure may result in an alternator malfunction.

**Note on ordering:**

- Workshop equipment

- Workshop equipment catalogue
- No.- 81 39 2 152 473

**Important!**

Risk of slipping due to coolant on the floor.

Danger of injury!

Catch and dispose of emerging coolant in drip tray (1) and if necessary special tool [00 2 030](#) (universal hydraulic lifting equipment).

Recycling:

Observe country-specific waste disposal regulations.



Graphic shows the N63 engine, procedure for other engines identical.

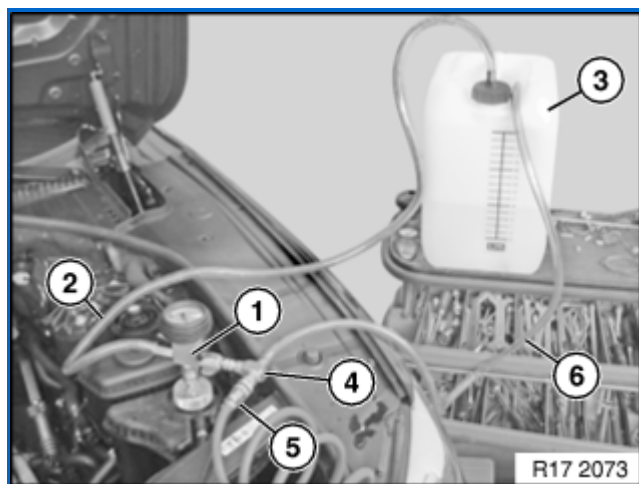
**Important!**

Check all the coolant hoses before filling the cooling system with the vacuum filling unit.

If necessary, replace damaged and porous coolant hoses.

Vacuum filling unit consists of:

- 1) Filling unit with vacuum meter and shutoff valves
- 2) Filler hose
- 3) Coolant container
- 4) Venturi nozzle
- 5) Compressed air connection (max. 6 bar)



- 6) Outgoing-air hose (lead outgoing-air hose into a collecting container)



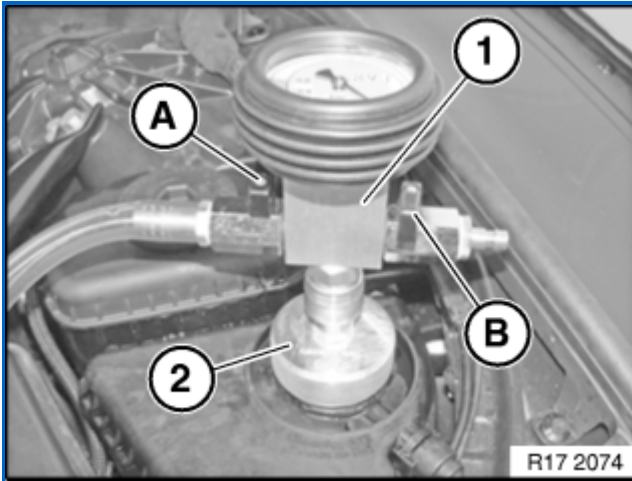
Preconditions

- Cooling system expansion tank must be empty.
- There must be sufficiently premixed coolant in the filling unit container, 1 - 2 litres more than the vehicle filling capacity.
 - Use [only recommended coolant](#).
 - Observe [mixture ratio](#).
 - Observe [filling capacities](#).
- Position the filling unit container at the same height as the coolant expansion tank.
- Compressed-air connection with 6 bar pressure present.
- Set heating to maximum temperature.

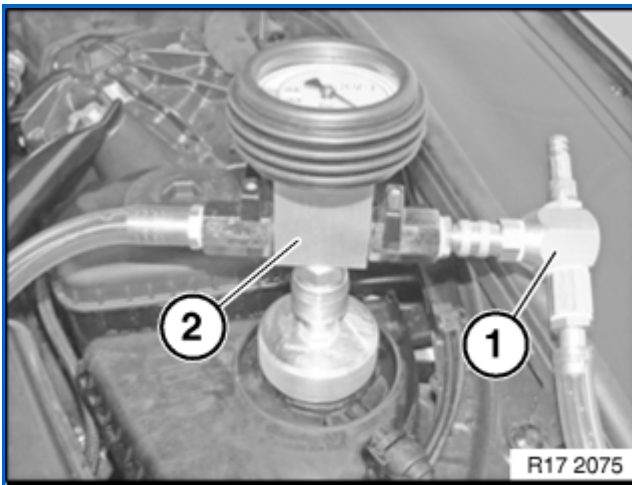
Application

Connect filling unit (1) to coolant expansion tank using suitable adapter (2) from set of special tools [17 0 100](#).

Shutoff valves (A) and (B) must be closed.

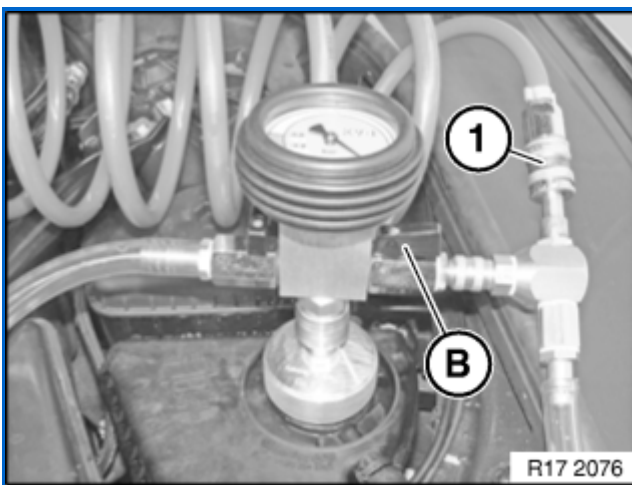


Connect venturi nozzle (1) to filling unit (2).

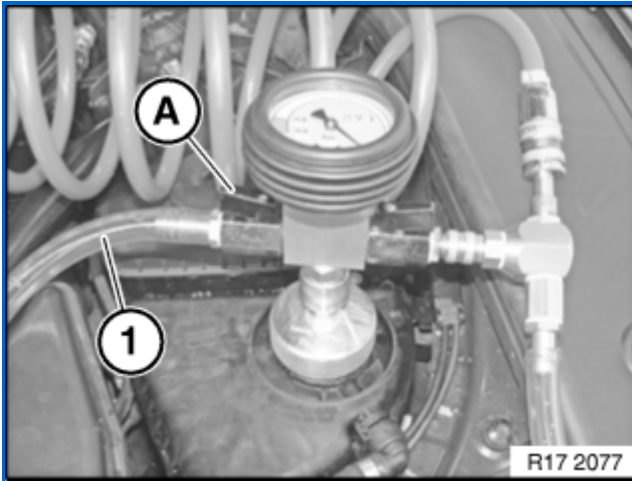


Connect compressed air (1) and open shutoff valve (B).

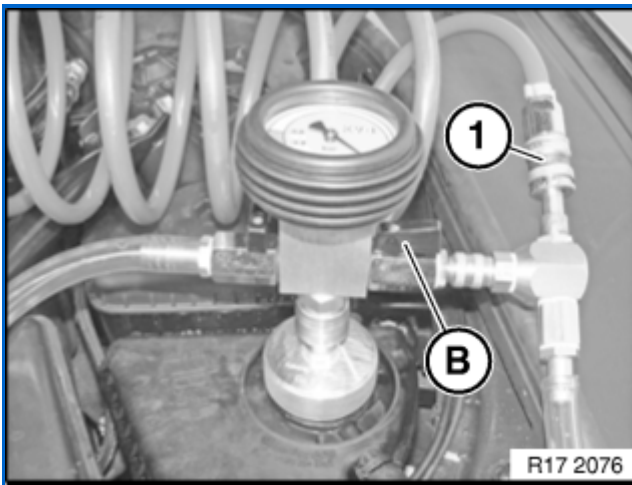
The venturi nozzle produces a flow noise.



Then open shutoff valve (A) until the filling hose (1) is free of bubbles. Close shutoff



valve (A) again. The filling hose (1) is vented in this way.

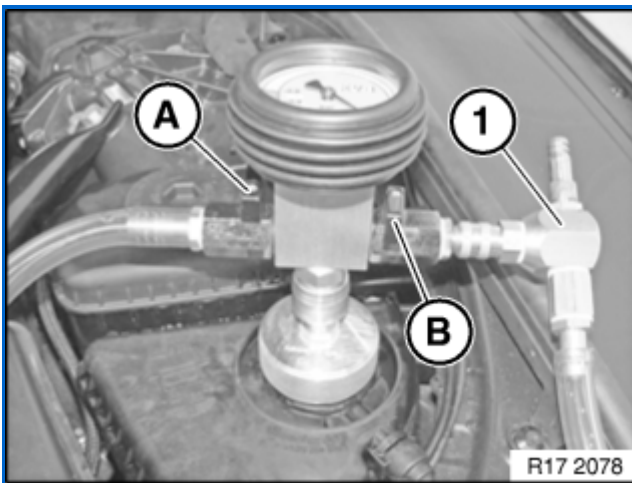


Shutoff valve (B) will remain open. Generate vacuum in cooling cycle for approx. 1 minute. The end vacuum is reached at a vacuum of -0.7 to -0.95 bar. Green scale on the vacuum meter.

Note:

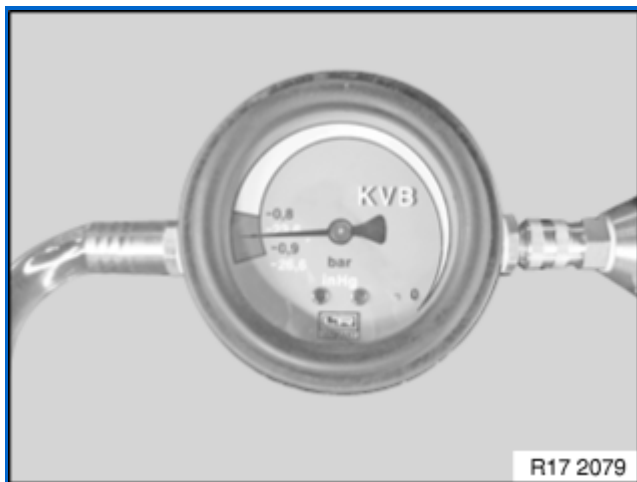
The coolant hoses contract during vacuum build-up.

Then close shutoff valve (B) again.



Both shutoff valves (A) and (B) must be closed. Then seal Venturi nozzle (1).

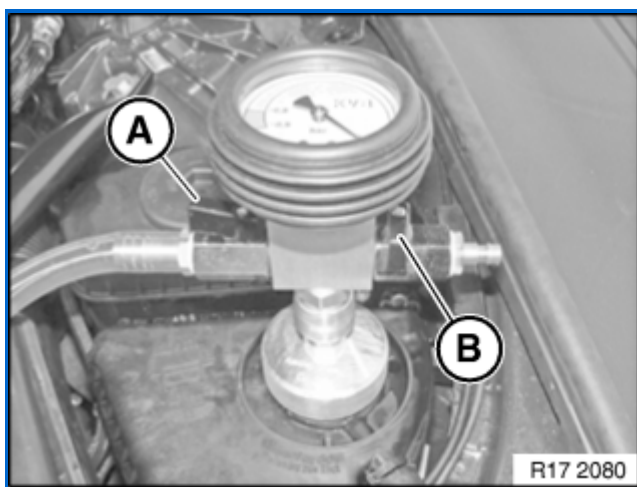
The cooling system must hold the vacuum for 30 seconds. If the needle in the vacuum



meter falls, this indicates a leak in the cooling system.

If the vacuum remains constant, proceed with filling.

In the event of leaks, check [cooling system for leaks](#).



Important!

There must be sufficiently [premixed coolant](#) in the filling unit container, 1 - 2 litres more than the vehicle filling capacity.

Position the filling unit container at the same height as the coolant expansion tank.

Shut-off valve (B) remains closed during the filling process.

To fill the cooling system, open shutoff valve (A) to filling unit container.

Coolant is now added.

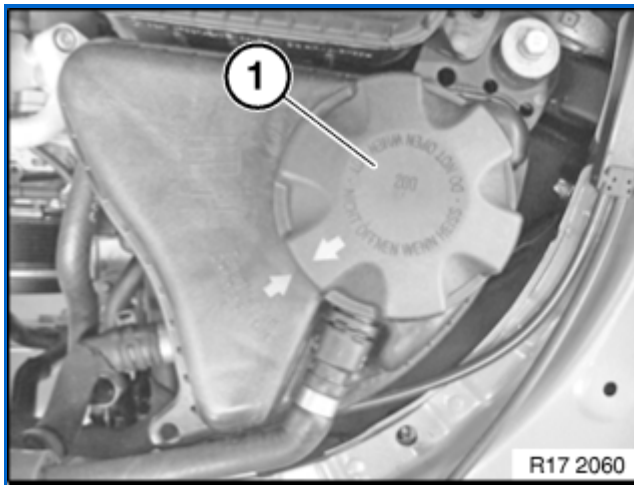
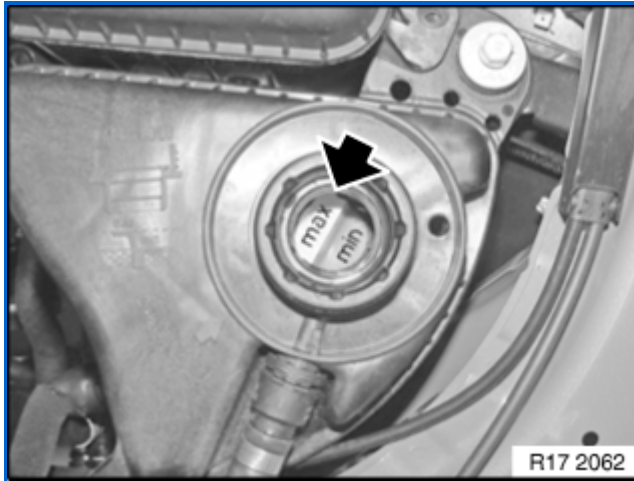
The filling procedure is finished when the needle in the vacuum meter is at 0 bar or no longer falls.

If necessary, reduce remaining vacuum. Open shutoff valve (B) to do so.



Remove filling unit with adapter from expansion tank.

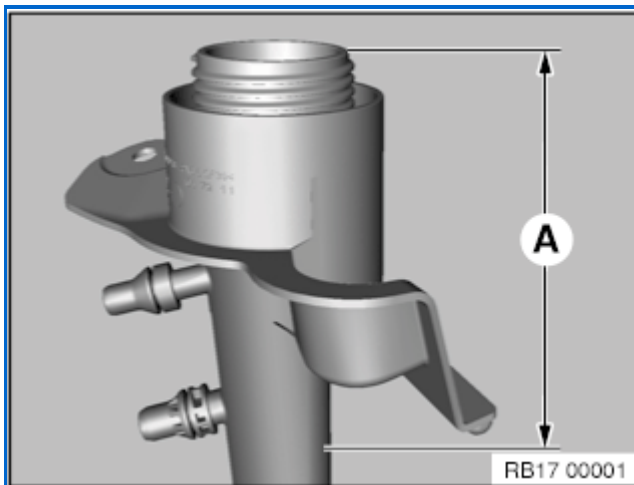
Adjust coolant level to maximum.



Close coolant expansion tank.

Installation note:

Close the sealing cap (1) until the arrows line up.

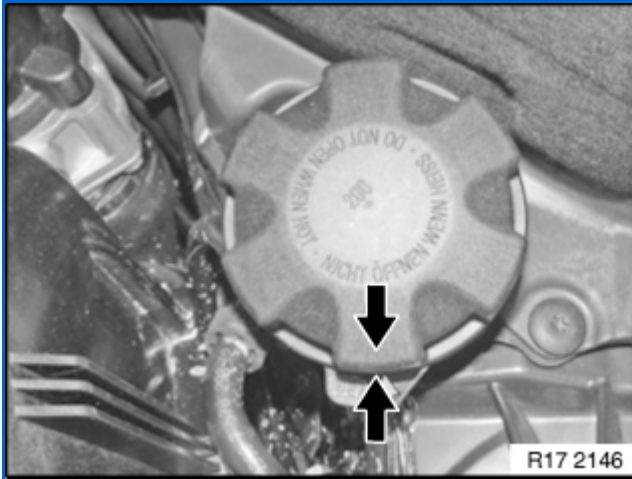


Only N53, N63 B40/B44 O 1, S63 B44 T 0:

Check coolant level when the engine has cooled down. Adjust coolant level to (A) approx. 110 mm – 160 mm below the upper edge of the coolant filler neck. If necessary, use a tape measure.

Only N53, N63 B40/B44 O 1, S63 B44 T 0:

Close coolant expansion tank.

**Installation note:**

Close the sealing cap (1) until the arrows line up.



After the cooling system has been filled with the vacuum filling unit, another bleeding procedure must be performed for the following vehicles:

- F10, F11, F18 N52T
- F10, F11 N53
- F06, F07, F10, F11, F12, F13, F18 N55
- F07, F06, F10, F11, F12, F13 N63 B40/B44 O 0/1
- [F06, F10, F12, F13 S63 B44 T 0](#)
- F10 N55 Hybrid 5
- F07, F10, F11, F18 N20
- F10, F11 N57 D30 S 1
- F10, F11, B47



Check function of cooling system.

Visual inspection of cooling system for tightness.