REP-REP-RAR5317-1700039 Bleed and fill cooling system with vacuum filling unit, VIN: VM11125

ISTA system version	**4.02.14.17970**	Data version	**R4.02.14.17970**	Programming data	**-**
VIN	**VM11125**	Vehicle	**1'/E82/Coupe/135i/N55/MANUAL/US/LL/2010/11**		
Int.lev.works	**-**	Int.lev.(cur.)	**-**	Int.lev.(tar.)	**-**
Mileage	**0 km**				

17 00 039 **Bleed and fill cooling system with vacuum filling unit**

Special tools required:

- 00 2 030
- 17 0 100

Type	Engine	Adapter Y from 17 0 100
E60 / E61 / E63 / E64	All	17 0 113
E65/E66	M54 / N52 / N62 / N62T / N73	17 0 105
E65/E66	M57S / M57T / M67 / M67T	17 0 113
E70 / E71 / E72	All	17 0 113
E81/ E82/ E84/ E87/ E88/ E89	All	17 0 113
E83	M54/ N46/ N52K	17 0 105
E83	M47S / M57S / M57T / M57Y / N47	17 0 113
E85 / E86	All	17 0 105
E90 / E91 / E92 / E93	All	17 0 113
R50 / R52	W10	17 0 107 and 17 0 102
R50	W17	17 0 109
R52 / R53	W11	17 0 109
R55 / R56 / R57 / R58 / R60 / R61	All	17 0 109

F25/F26	All	17 0 113
F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / F87	All	17 0 113
F80 / F82 / F83	S55	17 0 113
F15, F16	All	17 0 113
F54, F55, F56, F57	All	17 0 109
F45, F46,F48	All	17 0 109
F85, F86	All	17 0 113

Important!

Life-time 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.

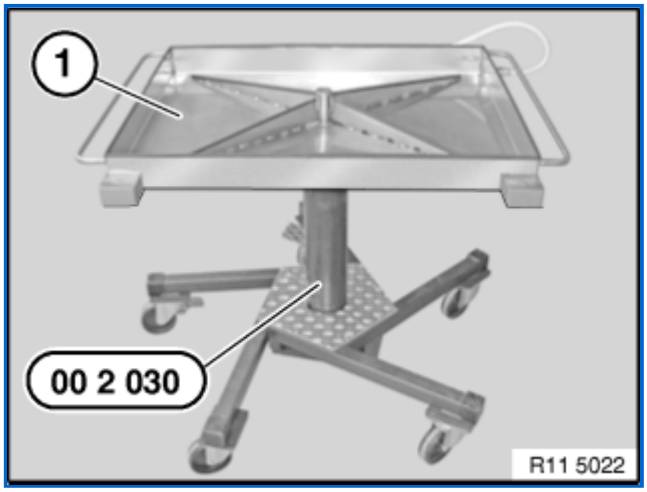
Cover alternator with suitable materials.

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

Ordering information:

- Workshop equipment
- Workshop equipment catalogue
- Vacuum filling unit order number 81 39 2 152 473
- Collecting vessel order no. 81 49 2 152 347
- Adapter: 17 0 100

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).

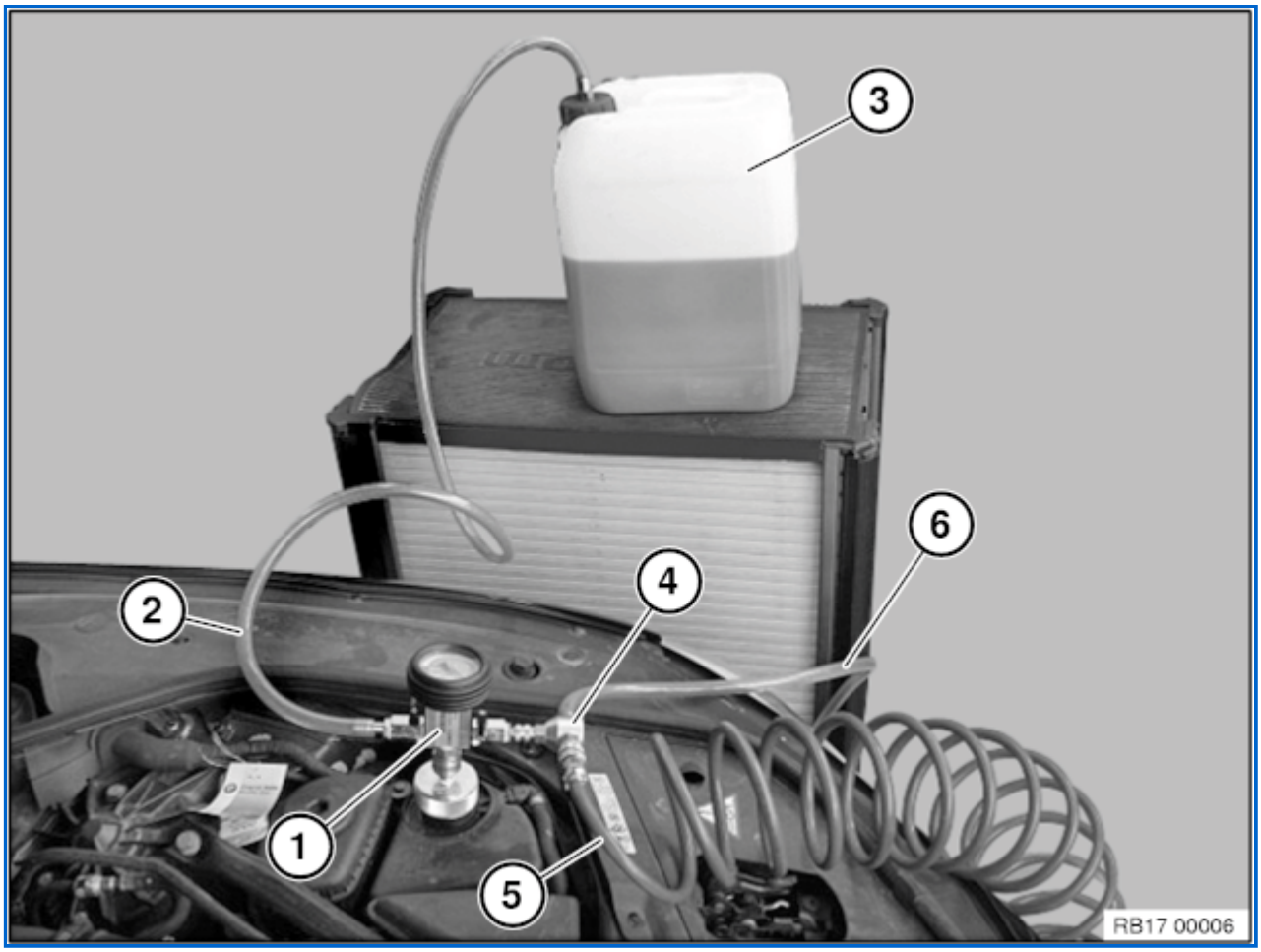
Recycling:

Observe country-specific waste disposal regulations.

Important!

All coolant hoses must be checked before filling cooling system with vacuum filling unit.

If necessary, replace damaged and porous coolant hoses.

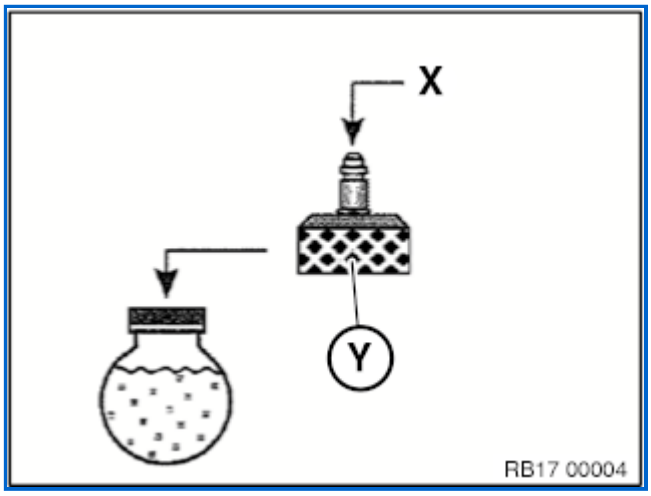


- 1) Vacuum filler device with pressure gauge and shutoff valves

- 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 sufficient premixed coolant in the vacuum filler device container, 1–2 litres more than the filling capacity prescribed for the vehicle.
  - Use only recommended coolant.
  - Observe mixture ratio.
  - Observe capacities.
- Position the vacuum filler device container at the same height as the coolant expansion tank.
- Compressed-air connection with 6 bar pressure present.
- Set heating to maximum temperature.

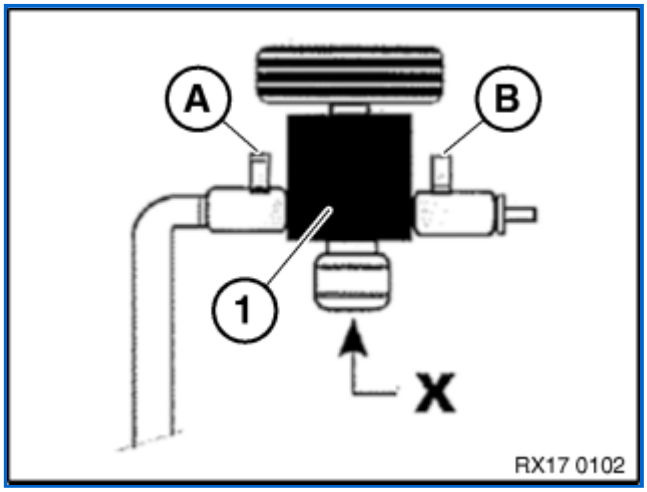


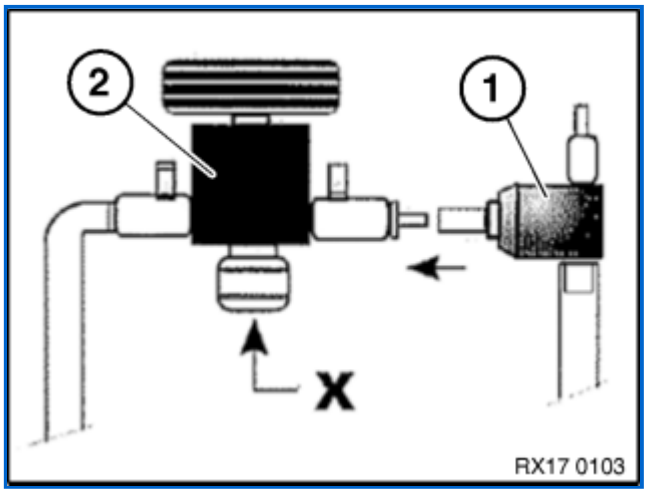
Select adapter (Y) according to table and connect to coolant expansion tank.

Connect vacuum filling unit to adapter connection (X).

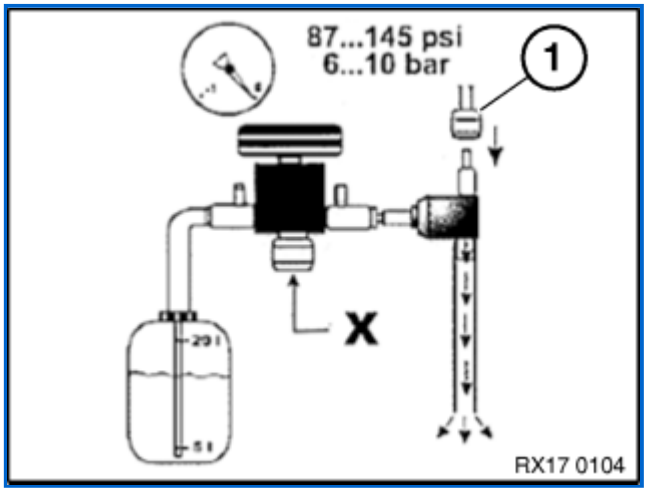
Shutoff valves (A) and (B) of the vacuum filler device (1) must be closed.

(X) Expansion tank connection



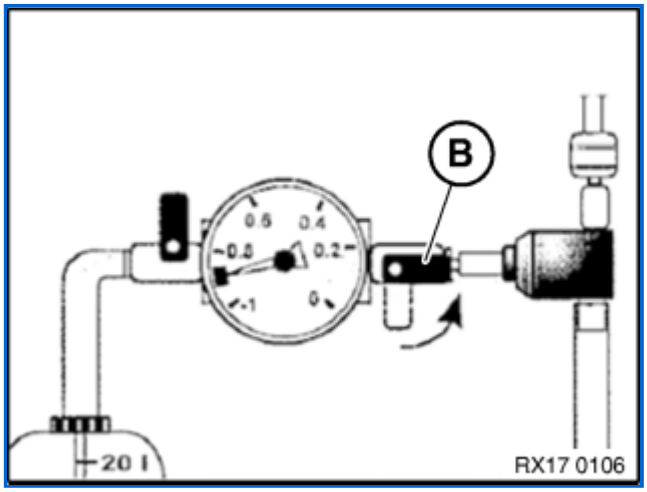


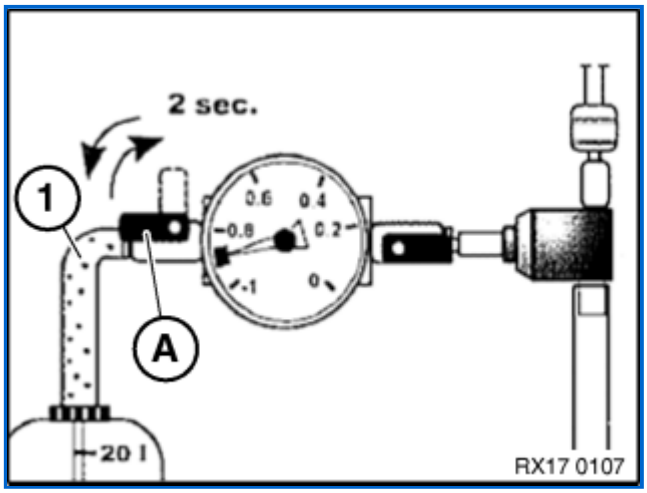
Connect Venturi nozzle (1) to vacuum filling unit (2).
(X) Expansion tank connection



Connect compressed air (1).
(X) Expansion tank connection

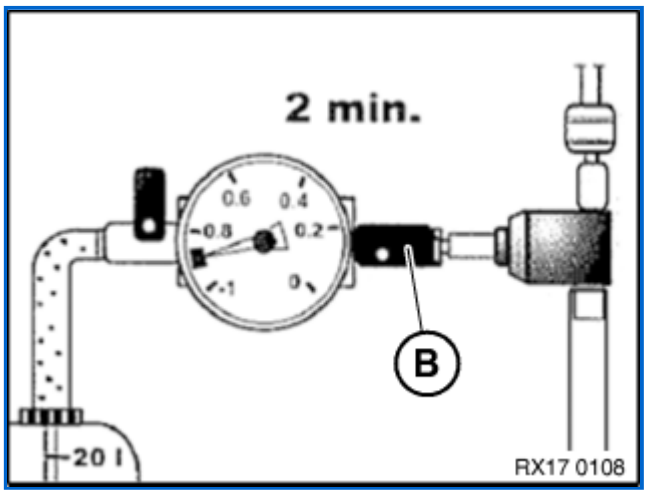
Open shutoff valve (B).
The venturi nozzle produces a flow noise.





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.

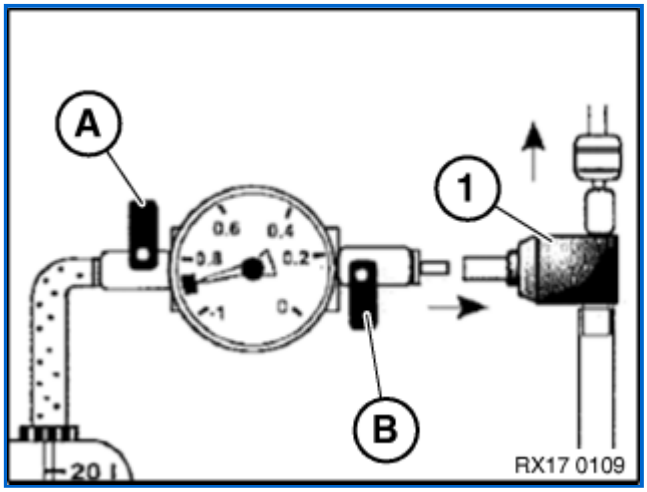


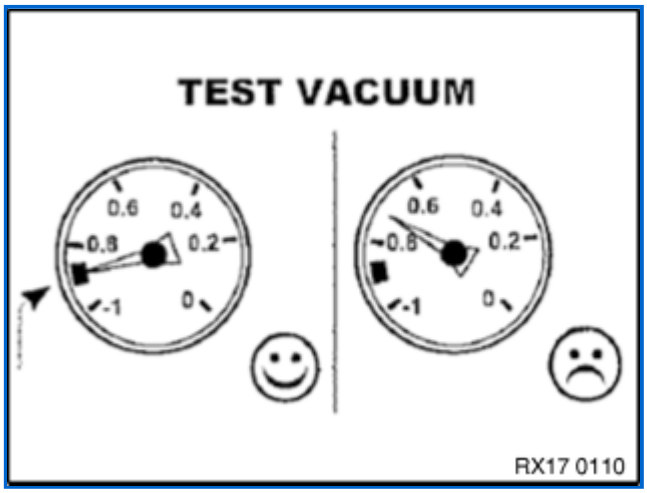
Shutoff valve (B) will remain open. Generate vacuum in coolant system for approx. 2 minutes. The final vacuum is reached at a vacuum of -0.7 to -0.95 bar. Green scale in the pressure gauge.

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).

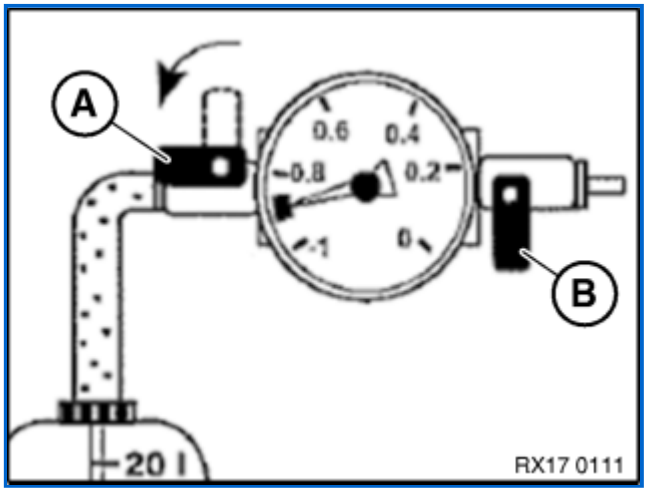




The cooling system must hold the vacuum for 30 s. If the needle in the pressure gauge drops, this indicates a leak in the cooling system.

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 vacuum filler device container, 1–2 litres more than the filling capacity prescribed for the vehicle.

Position the vacuum filler device container at the same height as the coolant expansion tank.

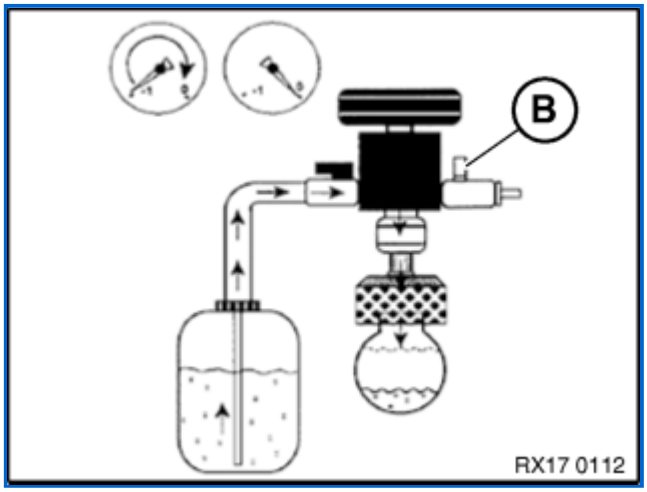
Shut-off valve (B) remains closed during the filling process.

To fill the cooling system, open shutoff valve (A) to vacuum filler device container.

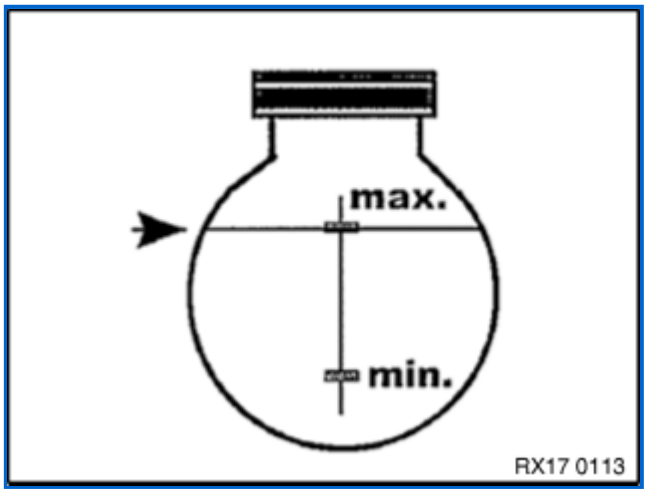
Coolant is now added.

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

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



Remove vacuum filling unit with adapter from expansion tank.



Adjust coolant level to maximum.

Close coolant expansion tank.

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

- E84 N20
- F25, F26 N52T, N55,
- F25, F26 N20
- E70, E71 N63, S63
- E70, E71 N57 D30 S 1
- E72 N63
- F20, F21, F30, F31 F35, N13
- F20, F21, F22, F23, F30, F31, F32, F33, F34, F35 F36 N20, N26
- F20, F21, F22, F23, F30, F31, F32, F33, F34, F35 F36 F87 N55

- F30 N55 Hybrid car
- F15 N55
- F15 N63 B44 O1
- F15 N57 D30 S 1
- F54,F55,F56,,F57,B36,B38, B48, B46
- F80, F82, F83, S55
- F45, F46,F48, B38,B46,B48
- F25, F26, B47
- F45, F46,F48, B47,B37
- F54,F55, F56, B37,B47
- F16 N63 B44 O1
- F16 N55
- F16 N57 D30 S 1
- F20, F21, F22, F23, F30, F31, F32,F33,F34, F36, B47
- F21, F20, B37
- F85, F86 S63 T 2

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

Note:
Do not open the coolant expansion tank sealing cap during the bleeding procedure.

Switch on the low-beam headlights to perform the bleeding procedure. If the low-beam headlights are not switched on, the ignition (Terminal 15) will switch off automatically after a certain period of time and interrupt the bleeding procedure.

1. Connect battery charger.
2. Switch the ignition on.
3. Switch on low-beam headlight.
4. Set heating to maximum temperature. Take back blower to smallest stage.
5. Driving experience switch must not be set to ECO PRO!
6. Press accelerator pedal for 10 seconds to floor. **Engine** must **not** be started.
7. The venting procedure is started when the accelerator pedal is pressed and takes approx. 12 minutes. (Electric coolant pump was activated and shuts down automatically after approx. 12 min).

8. Then adjust filling level in coolant expansion tank to maximum.
9. Check cooling system for tightness.
10. If the cooling system bleeding has to be performed again, deactivate DME completely (remove ignition key for approx. 3 minutes). Then repeat from point 3.

Check function of cooling system.

Check cooling system for tightness.

REP-REP-RAE8217N55-1700008 Draining and adding coolant (N55), VIN: VM11125

ISTA system version	**4.02.14.17970**	Data version	**R4.02.14.17970**	Programming data	**-**
VIN	**VM11125**	Vehicle	**1'/E82/Coupe/135i/N55/MANUAL/US/LL/2010/11**		
Int.lev.works	**-**	Int.lev.(cur.)	**-**	Int.lev.(tar.)	**-**
Mileage	**0 km**				

17 00 005 Draining and adding coolant (N55)

Special tools required:

- 00 2 030

Warning!

Risk of scalding!

Only carry out repair work on the cooling system after the engine has cooled down!

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.

Installation note:
Use only recommended coolant.

Observe mixture ratio.

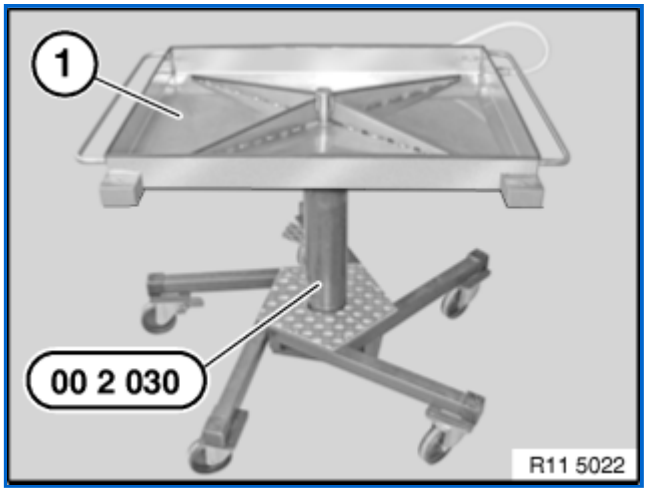
Protective measures/rules of conduct:

- Wear safety goggles
- Wear protective gloves

- Observe national/country-specific regulations

Important!

For dirt contamination of the cooling system (e.g. by engine oil), the cooling system must be rinsed with water until all dirt contamination is removed!



Important!

Risk of skidding due to coolant on the floor.

Danger of injury!

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

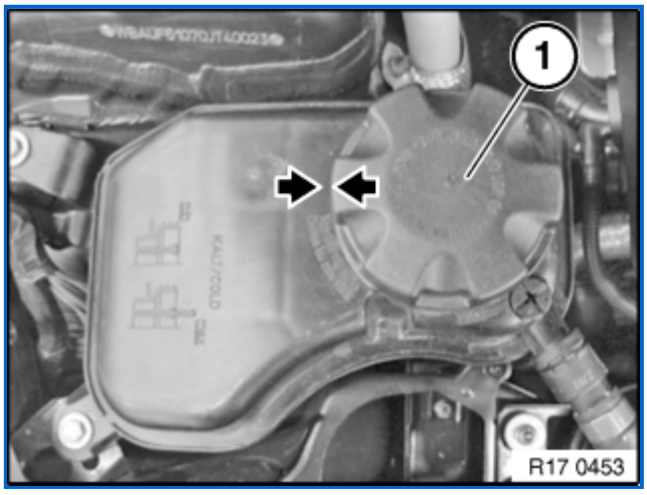
Recycling:

Observe country-specific waste disposal regulations.

Necessary preliminary work:

- Follow notes for carrying out repair work on the cooling system .
- Remove charge air cooler.
- **OnlyE84 with pedestrian protection:**

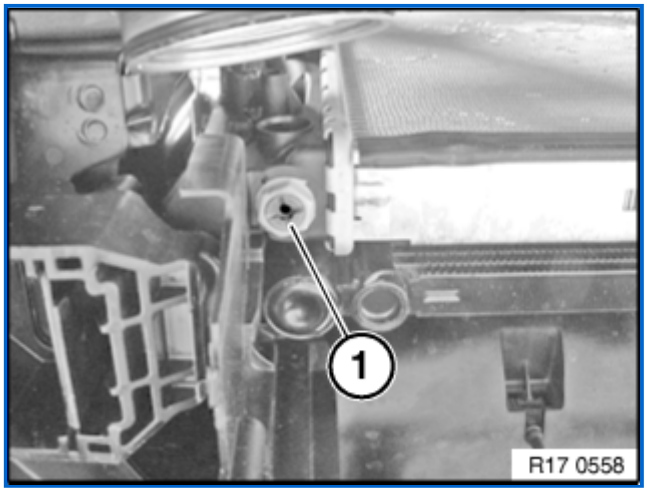
  Remove pedestrian protection.



Draining coolant:

Open sealing cap (1) on coolant expansion tank (2).

Installation note:
Close sealing cap (1) until the arrow marks line up.

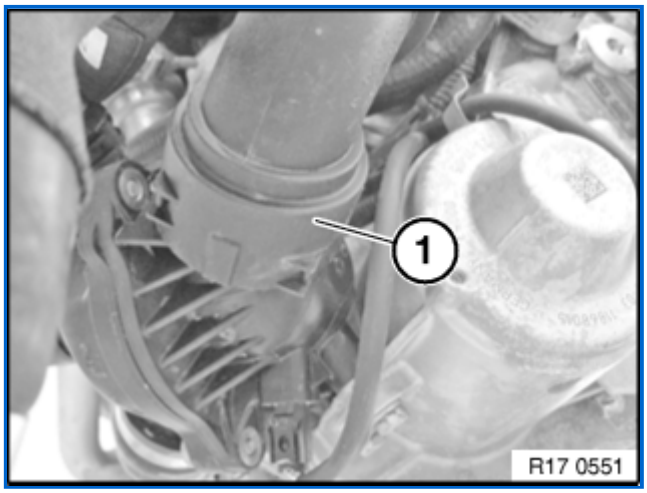


Open coolant drain plug (1).

Drain, catch and dispose of coolant.

Installation note:

- Replace sealing ring.



Unfasten and detach coolant hose (1) from thermostat housing.

Drain, catch and dispose of coolant.

Note:
Adding coolant:

Use only recommended coolant.

Observe mixture ratio.

Observe capacities.

Observe bleeding instructions without fail.

Fill and bleed cooling system.

Visual inspection of cooling system for tightness.

REP-REP-RAE8211N55-1153000 , VIN: VM11125 **Removing and installing/replacing coolant thermostat (N55)**

ISTA system version	**4.02.14.17970**	Data version	**R4.02.14.17970**	Programming data	**-**
VIN	**VM11125**	Vehicle	**1'/E82/Coupe/135i/N55/MANUAL/US/LL/2010/11**		
Int.lev.works	**-**	Int.lev.(cur.)	**-**	Int.lev.(tar.)	**-**
Mileage	**0 km**				

11 53 000 **Removing and installing/replacing coolant thermostat (N55)**

Warning!

Risk of scalding!

Only perform these tasks on an engine that has cooled down.

Danger of injury!

Risk of skidding due to coolant on the floor.

Recycling:

Catch and dispose of drained coolant in a suitable collecting vessel.

Observe country-specific waste disposal regulations.

Important!

Read and comply with General Notes.

Protect plug connections against coolant and dirt contamination.

Cover plug connections with suitable materials.

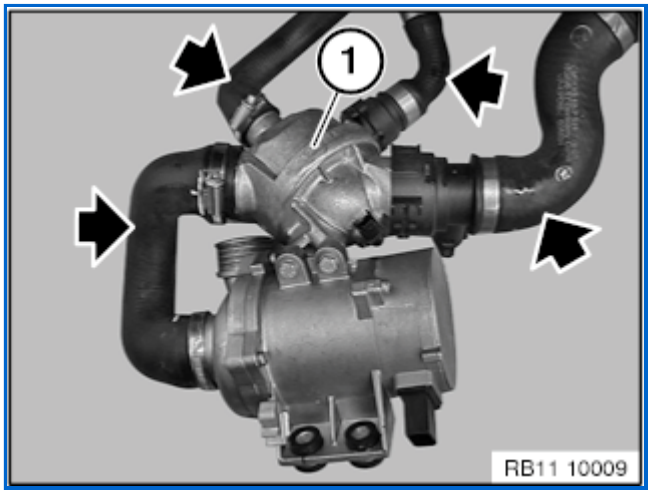
Necessary preliminary tasks:

- Remove front underbody protection.
- **E70, E71:**

  Remove reinforcement plate.
- **E82, E84, E88, E90, E91, E92, E93, F25:**

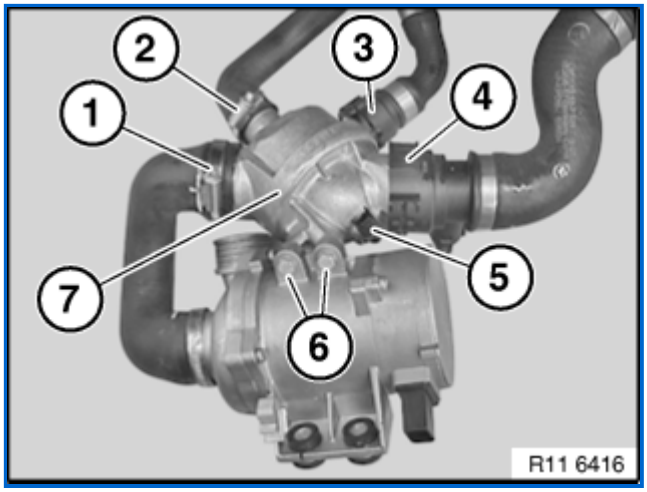
  Remove charge air cooler.
- Remove fan cowl.

- Place oil drip tray for coolant under engine compartment.



Note:
Illustration shows coolant thermostat removed.

Disconnect coolant hoses (arrows) on the thermostat (1) with clamping tongs.



Release hose clamp (1) and detach coolant hose.

Release hose clamp (2) and detach coolant hose.

Unlock and detach coolant hose (3).

Unlock and detach coolant hose (4).

Disconnect plug connection (5).

Release screws (6).

Tightening torque 11 53 1AZ.

Remove coolant thermostat (7).

Note:
Illustration shows coolant thermostat removed.

Assemble engine.

Fill the cooling system.

Observe capacities.

Installation note:
Check coolant hoses for cracks and damage.

Renew coolant hoses as required.

Recommendation:

On vehicles older than five years, renew coolant hoses.

Check function of cooling system.

REP-REP-RAE8211N55-1151000 Removing and installing/replacing coolant pump (N55) , VIN: VM11125

ISTA system version	**4.02.14.17970**	Data version	**R4.02.14.17970**	Programming data	**-**
VIN	**VM11125**	Vehicle	**1'/E82/Coupe/135i/N55/MANUAL/US/LL/2010/11**		
Int.lev.works	**-**	Int.lev.(cur.)	**-**	Int.lev.(tar.)	**-**
Mileage	**0 km**				

11 51 000 **Removing and installing/replacing coolant pump (N55)**

Warning!

Risk of scalding!

Only perform this work after engine has cooled down.

Important!

If a coolant pump that has already been operated is reused, it must be filled with coolant after removal.

Mixture ratio, water: coolant = 1 : 1

Protect plug connections against coolant and contamination.

Recycling:

Catch and dispose of drained coolant in a suitable container.

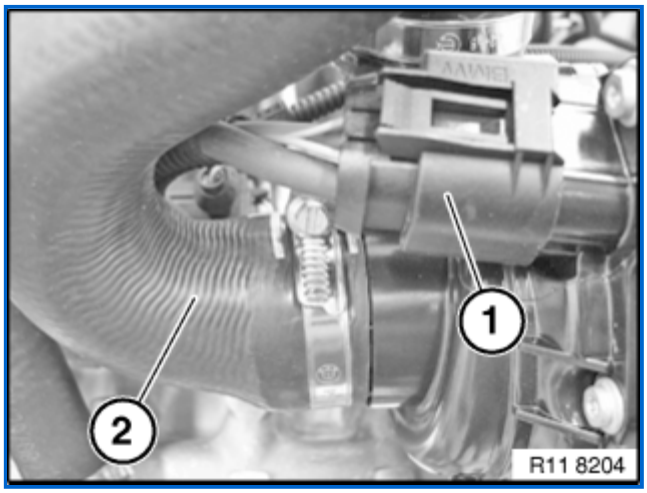
Observe country-specific waste disposal regulations.

Installation note:

1. All screws, nuts, bolts and hose clamps removed during the repair must be replaced.
2. Retaining elements on chassis and suspension and steering parts must be replaced.

Necessary preliminary tasks:

- Follow diagnosis instructions.
- Remove engine splash guard.
- Drain coolant.
- Remove thermostat.
- Remove reinforcement plate (only E70, E71, E84).

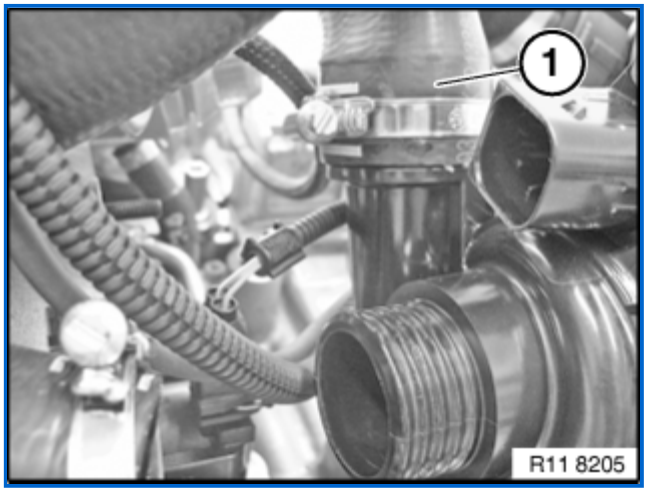


Disconnect plug connection (1).

Release coolant hose (2).

Installation note:
Note installation hose clamps.

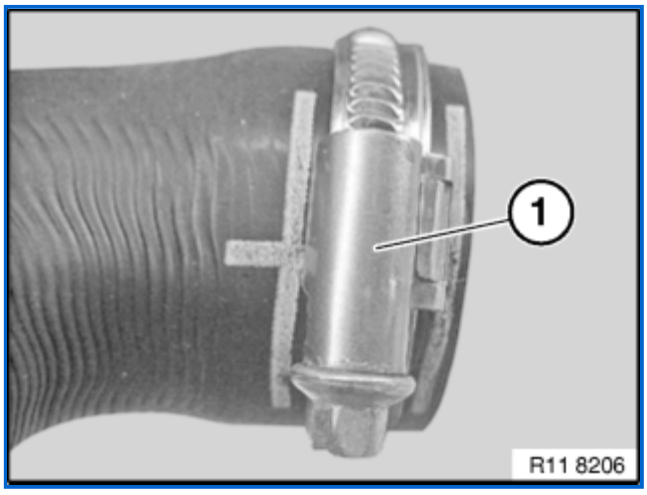
Tightening torque 11 53 9AZ.



Release coolant hose (1).

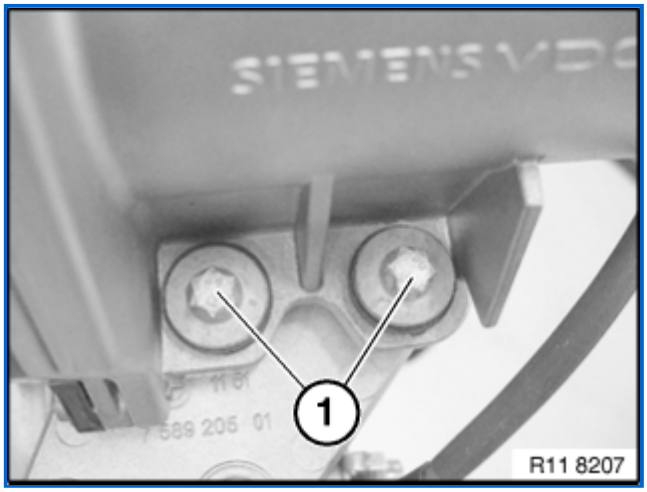
Installation note:
Note installation hose clamps.

Tightening torque 11 53 5AZ.



Follow assembly instructions:

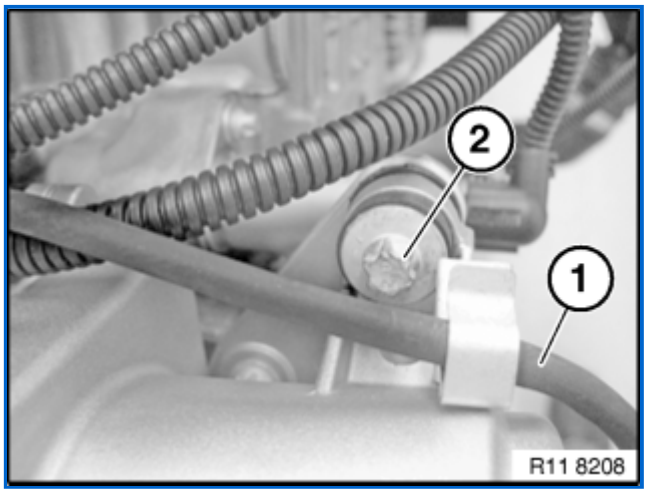
Installation note:
Hose clamps (1) must be installed in the centre of the marked area (see graphic).



Release screws (1).

Tightening torque 11 51 2AZ.

Installation note:
Replace aluminium screws.



Unclip cable (1) from bracket.

Release screw (2).

Tightening torque 11 51 2AZ.

Installation note:
If the electric coolant pump is reused, it must be rotated one turn due to the breakaway torque at the impellers.

Assemble engine.

Bleeding instructions must be observed without fail.