

## ENGINE

### Cooling System - Repair

## COOLANT, CHECKING COOLING SYSTEM

### 17 00 009 CHECKING COOLING SYSTEM FOR WATER LEAKS

#### Special tools required:

- 00 2 030
- 17 0 101
- 17 0 113
- 17 0 114

**WARNING: Risk of scalding!**

Only perform this work after engine has cooled down.

#### Protective measures/rules of conduct

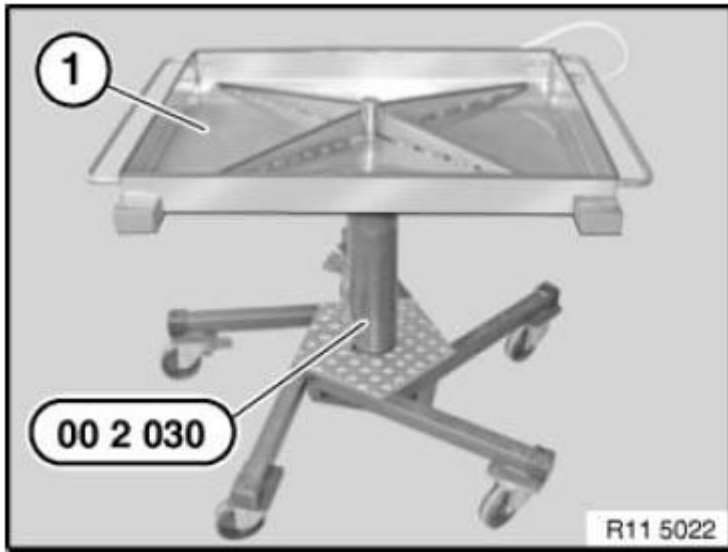
- Wear safety goggles
- Wear protective gloves
- Observe national/country-specific regulations

**IMPORTANT: Risk of slipping due to coolant on the floor.  
Risk 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.



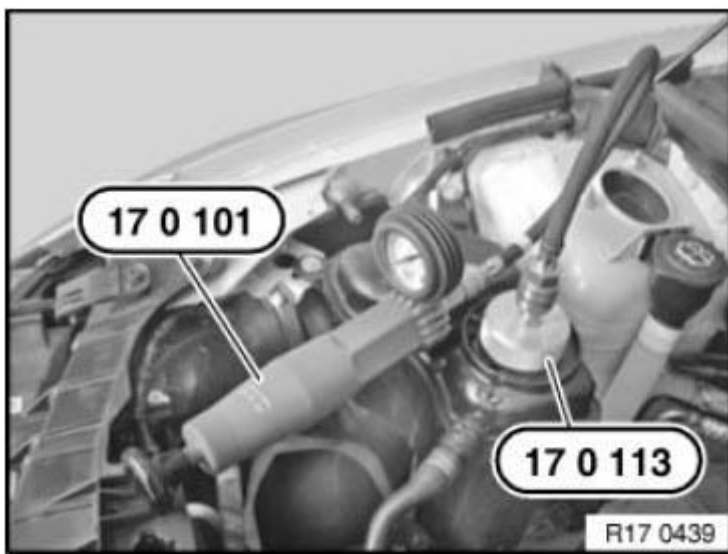
**Fig. 1: Identifying Drip Tray And Special Tool 00 2 030 (Universal Hydraulic Lifting Equipment)**  
Courtesy of BMW OF NORTH AMERICA, INC.

**Checking pressure drop in cooling system**

Open cap on coolant expansion tank. Fit special tool 17 0 101 / 17 0 113 .

Build up gauge pressure, wait approx. 2 minutes.

Cooling system is impervious to leaks if pressure drop is max. 0.1 bar.



**Fig. 2: Identifying Special Tool 17 0 101 / 17 0 113**  
Courtesy of BMW OF NORTH AMERICA, INC.

**Checking pressure relief valve in cap**

**NOTE:** While the vehicle is driven at high outside temperatures, the design may cause the pressure relief valve in the cap to open slightly and air together with dissolved coolant to escape. This coolant vapour condenses on the surface of the expansion tank and leaves traces when the vehicle has cooled down. These traces do not indicate whether the cap is defective or not. When the vehicle has been parked up for an extended period of time, the residual escaping coolant can cause the pressure relief valve in the sealing cap to stick; therefore check the cap again 2 to 3 times.

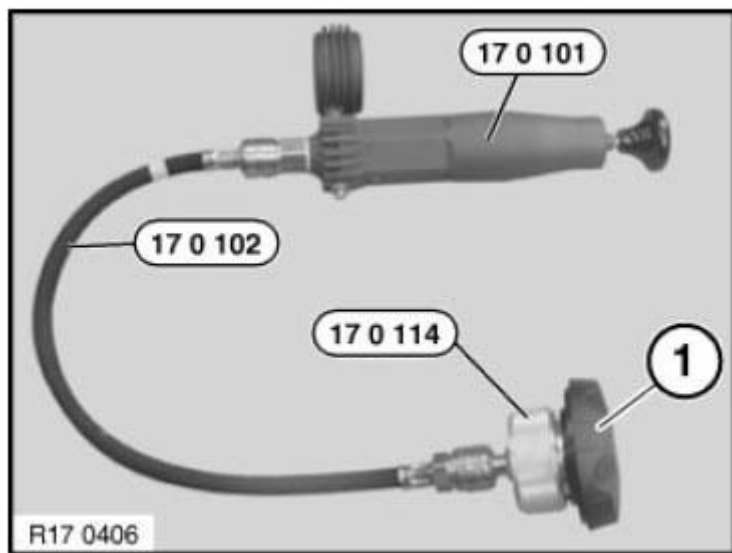
Replace the cap only after you have checked three times and there is an incorrect opening pressure.

**Checking pressure relief valve in cap**

Screw cap (1) onto special tool **17 0 114** .

Build up pressure with special tool (hand pump) **17 0 101** ; observe pressure gauge to ascertain when opening pressure is achieved.

Compare **OPENING PRESSURE OF PRESSURE RELIEF VALVE** .



**Fig. 3: Checking Pressure Relief Valve In Cap**  
Courtesy of BMW OF NORTH AMERICA, INC.

**17 00 515 CHECKING FUNCTION OF RADIATOR AND HEATING SYSTEM****Special tools required:**

- 13 3 010

**WARNING: Danger of scalding!**  
**Only carry out work on cooling system after engine has cooled down.**

**Necessary preliminary tasks**

- Switch off ignition.
- Remove air duct.
- Remove fan cowl with electronic fan.

Check production date.

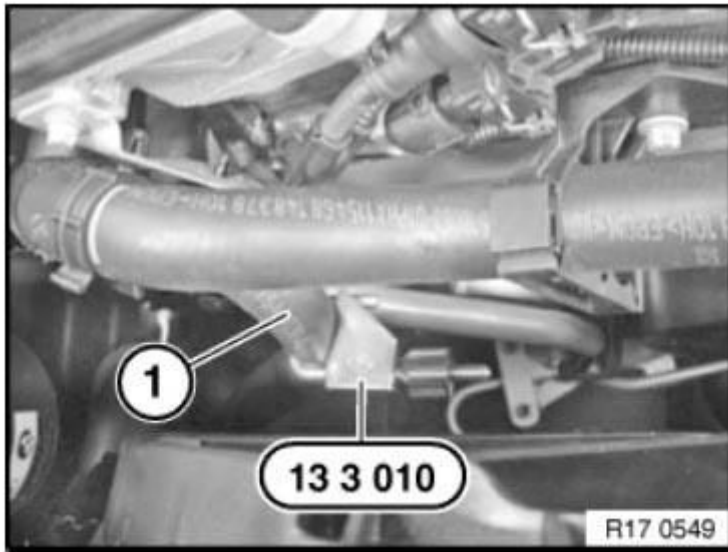


**Fig. 4: Locating Production Date**  
**Courtesy of BMW OF NORTH AMERICA, INC.**

Clamp off low-temperature feed lines with special tool 13 3 010.

Function test:

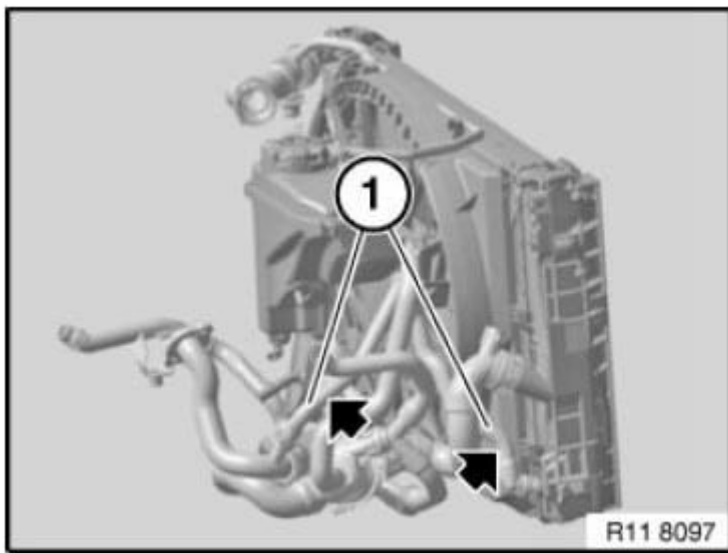
Observe diagnosis instructions.



**Fig. 5: Identifying Low-Temperature Feed Lines And Special Tool 13 3 010**  
Courtesy of BMW OF NORTH AMERICA, INC.

**Check function of radiator.**

Clamp off low-temperature feed line (1) at coolant pump outlet or radiator inlet with special tool 13 3 010 (see arrows).



**Fig. 6: Locating Low-Temperature Feed Line At Coolant Pump Outlet Or Radiator Inlet**  
Courtesy of BMW OF NORTH AMERICA, INC.

Automatic transmission only

**Check function of heat exchanger.**