

Engine cooling: Precautions for the repair

IMPORTANT

The circuits are designed to be pressurized, so be careful at high temperatures (risk of serious burns).

Never remove the cap from the expansion bottle while the engine is hot.

Take care when carrying out a repair under the bonnet, as the radiator fan(s) may start to operate without warning.

Do not open the bleed valve(s) while the engine is running.

Only use recommended coolants: **GLACEOL RX (TYPE D)**.

WARNING

- The coolant helps to keep the engine running properly (heat exchange).
- The system does not operate using pure water.

WARNING

Take care not to damage the cooling unit fins (radiator, condenser, etc.) during handling. When carrying out a repair that requires a complete circuit drain, it is essential to flush the circuit with clean water, blow compressed air through the circuit to eliminate water, fill and drain the circuit and then « measure the effective protection ». The parameters to be observed are:

- protection down to - **25°C ± 2** for cold and temperate countries,
- protection down to - **40 °C ± 2** for very cold countries.

WARNING

- Drain and refill with the engine warm.
- Flush and refill with oil with the engine cold or warm.
- Never flush a warm engine (risk of major thermal shock).

Engine cooling system: Specifications

Vehicles in the current range have cooling systems with the following basic specifications:

- hermetically-sealed pressurised circuit (expansion chamber valve),

- circuit using type « D » liquid,

- passenger compartment heating systems equipped with a « heater matrix » type radiator located under the dashboard which helps to cool the engine.

Coolant quantities

Engine	Quantity (litres)	Grade
D4F 764	5	Concentrated ANTIFREEZE (type D)
D4F 740/742	5	GLACEOL RX (type D) Only use coolant
D4F 784	5.5	
K4J	5.5	
K4M	6.5	
M4R 701	5.9	
F4R 830/832	5	
K9K 764	6.5	
K9K 766	6.5	
K9K 768	6.5	
K9K 772	6.5	
K9K 750	6.5	
K9K 752	6.5	

Special notes:

- protection down to - **25°C ± 2** for cold and temperate countries,
- protection down to - **37°C ± 2** for very cold countries.

Note:

Only use extreme cold coolant (Concentrated anti-freeze type D) for the **D4F 764** engine, with Parts Department numbers **77 11 170 548 (1 l)** or **77 11 219 692 (2.5 l)**. Dilute **0.2 litres** of concentrated antifreeze for **1 litre** of Glaceol RX liquid (temperate countries). The mixture can also be made up of distilled water with a dilution ratio of **50%** concentrated antifreeze to **50%** distilled water.

Thermostat opening temperatures

Engine	Start of opening (°C)	End of opening (°C)
D4F 740/742	89	99 ± 2
D4F 764 Thermostat in non-actuated mode	108 ± 2	120