

Cooling system: Draining - Refilling

- ☐ Pressurise the system using the tool to check that there are no leaks (see **19A, Cooling, Engine cooling system: Check**, page **19A-3**).

- ☐ Refit the expansion bottle cap.

- ☐ Clean any surfaces soiled by the coolant.

IV - BLEEDING

- ☐

WARNING

Do not open the bleed screw whilst the engine is running; this would damage the engine.

Start the engine.

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- ☐ Maintain the engine speed at **2,500 rpm** until the engine cooling fan starts for the third time (time required for automatic degassing).

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- ☐ Maintain the engine speed at **1500 rpm** varying the engine speed rapidly (until the maximum engine speed is reached) 2 to 3 times approximately every **2 minutes** until the engine cooling fan starts for the second time.

- ☐ Check that the heating is operating correctly.
- ☐ Let the engine cool until it reaches a coolant temperature below **50°C**.
- ☐ Make sure the coolant fluid level is at the « Maximum » mark.
- ☐ Refit the expansion bottle cap.

V - FINAL OPERATION

- ☐ Remove the **coolant recovery tray**.
- ☐ Refit the engine undertray.
- ☐ Refit the front bumper (see **Front bumper assembly: Exploded view**) (55A, Exterior protection).

Cooling radiator: Removal - Refitting

K4M

Special tooling required

Mot. 1448	Remote operation pliers for hose clips.
Car. 1363	Set of trim removal levers.

IMPORTANT

When working in the engine compartment, take care as the radiator fan(s) may start up unexpectedly (risk of being cut).

To avoid any risk of serious burns when the engine is hot:

- do not open the expansion bottle cap,
- do not drain the cooling system,
- do not open the bleed screw(s).

WARNING

Prepare for the flow of fluid, and protect the surrounding components.

WARNING

When carrying out a repair that requires a complete change, it is essential to flush the circuit with clean water, blast compressed air through the circuit to drive out the water, fill and bleed the circuit and then measure the effective protection.

The criteria to be met are:

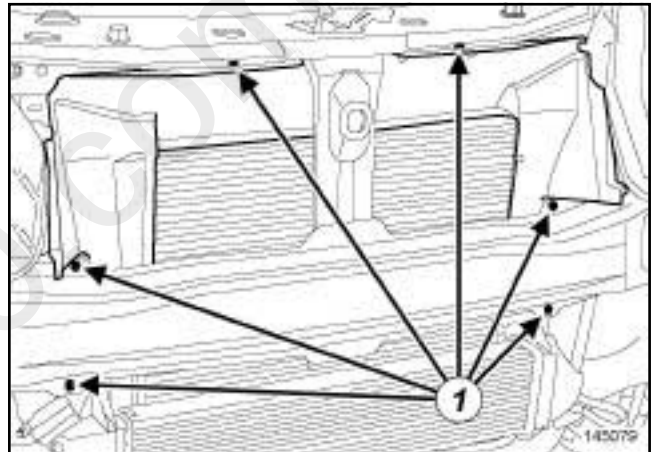
- protection down to **-25°C ± 2** for cold and temperate countries,
- protection down to **-40°C ± 2** for "extreme cold" countries.

REMOVAL**I - REMOVAL PREPARATION OPERATION**

- ☐ Position the vehicle on a lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- ☐ Remove:
 - the engine undertray,
 - the front bumper (see **Front bumper assembly: Exploded view**) (55A, Exterior protection),

- the injector rail protector (see **13B, Diesel injection, Injector rail: Removal - Refitting**, page 13B-25) ,
- the air resonator (see **12A, Fuel mixture, Air resonator: Removal - Refitting**, page 12A-2) ,
- the fan assembly (see **19A, Cooling, Engine cooling fan assembly: Removal - Refitting**, page 19A-27) .

- ☐ Drain the engine cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page 19A-6)

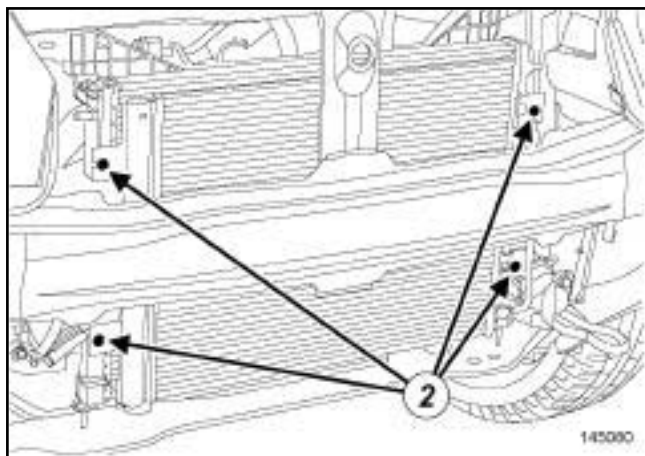
II - REMOVAL OPERATION**AIR CONDITIONING**

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- ☐ Remove:
 - the air deflector mounting pins (1) ,
 - the air deflector.
- ☐ Attach the condenser to the front impact cross member using a safety strap.

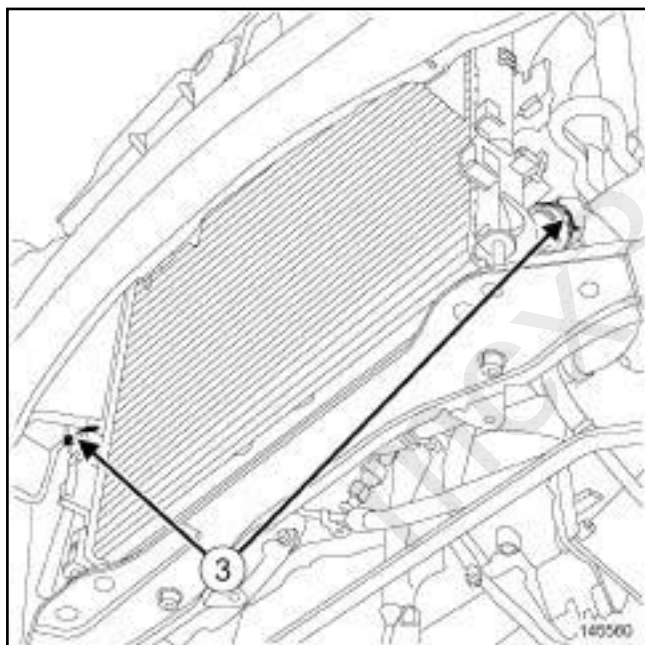
Cooling radiator: Removal - Refitting

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- ☐ Remove the condenser bolts (2) .



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- ☐ Remove the cooling radiator hose clips (3) using the tool (**Mot. 1448**).
- ☐ Disconnect the cooling radiator hoses using the (**Car. 1363**).
- ☐ Remove the engine cooling radiator from above the vehicle.

REFITTING

I - REFITTING PREPARATION OPERATION

- ☐ Always replace the cooling radiator hose clips.

II - REFITTING OPERATION

- ☐ Proceed in the reverse order to removal.
- ☐ Refill and bleed the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page **19A-6**) .
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

Cooling radiator: Removal - Refitting

K9K

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Car. 1363	Set of trim removal levers.

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REMOVAL

I - REMOVAL PREPARATION OPERATION

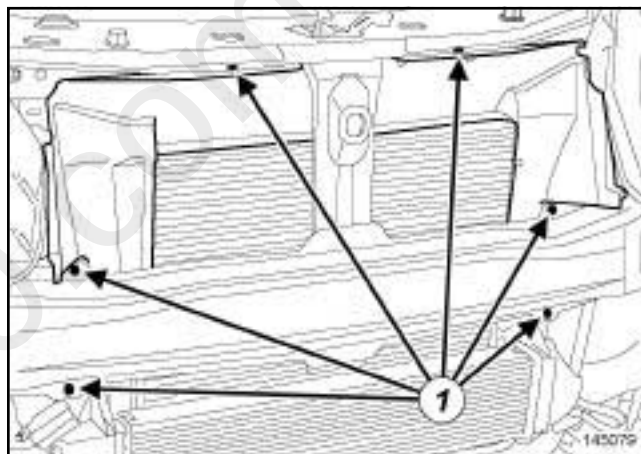
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- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- ☐ Remove:
 - the engine undertray,
 - the front bumper (see **Front bumper assembly: Exploded view**) (55A, Exterior protection),

- the engine cover,
- the air intake sleeve,
- the intercooler (see **12B, Turbocharging, Intercooler: Removal - Refitting**, page 12B-8) ,
- the fan assembly (see **19A, Cooling, Engine cooling fan assembly: Removal - Refitting**, page 19A-27) .

- ☐ Drain the engine cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page 19A-6)

II - REMOVAL OPERATION

AIR CONDITIONING



145079

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