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COOLING SYSTEM FILLING AND DIAGNOSTIC TOOL: USE



Note, one or more warnings are present in this procedure



Special tooling required	
Fault finding and filling - bleeding the cooling circuit.	Mot. 1700

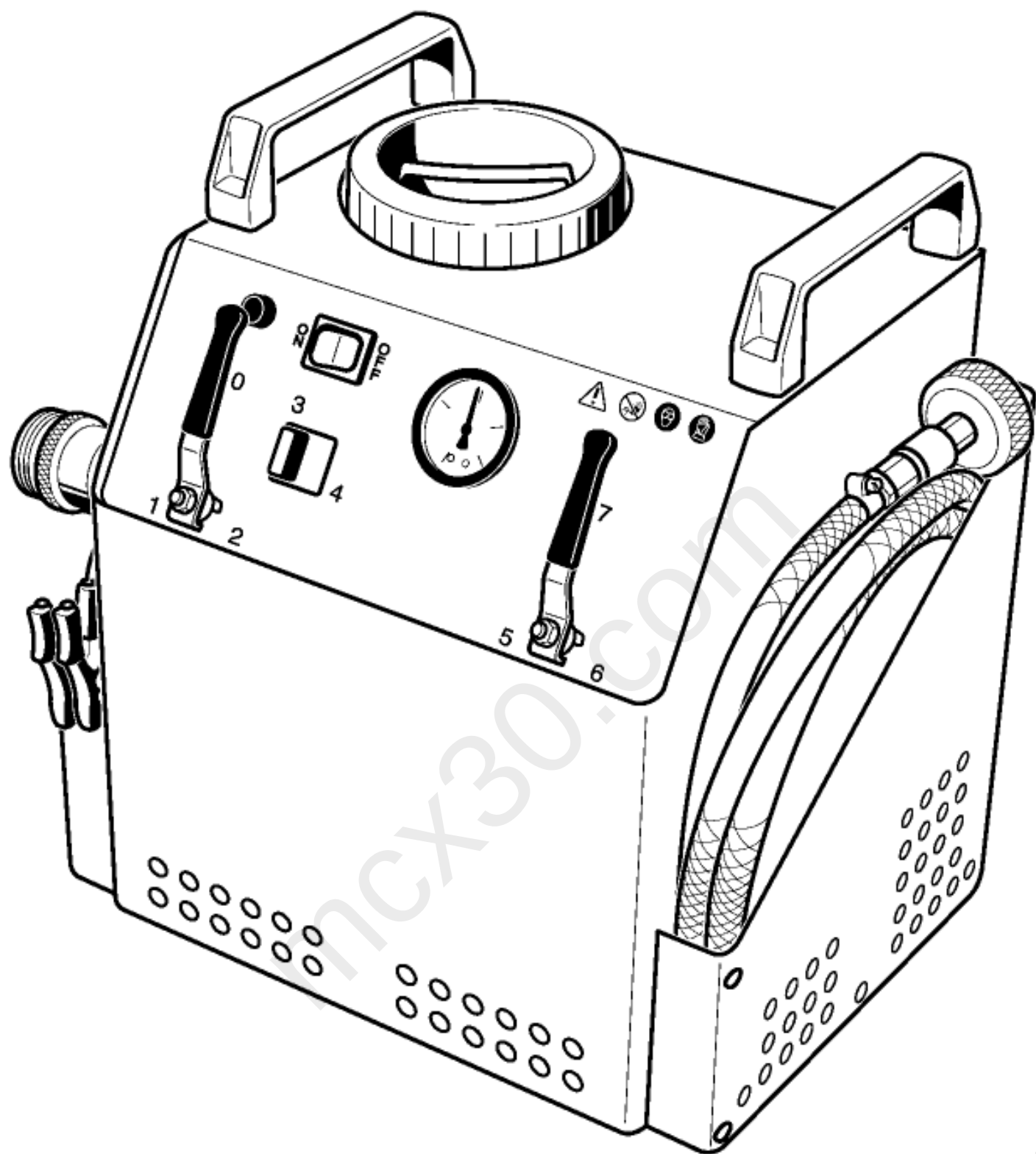


WARNING

Before carrying out any operation on a vehicle fitted with the Stop & Start system, always follow the safety instructions [Vehicle: Precautions for the repair](#)

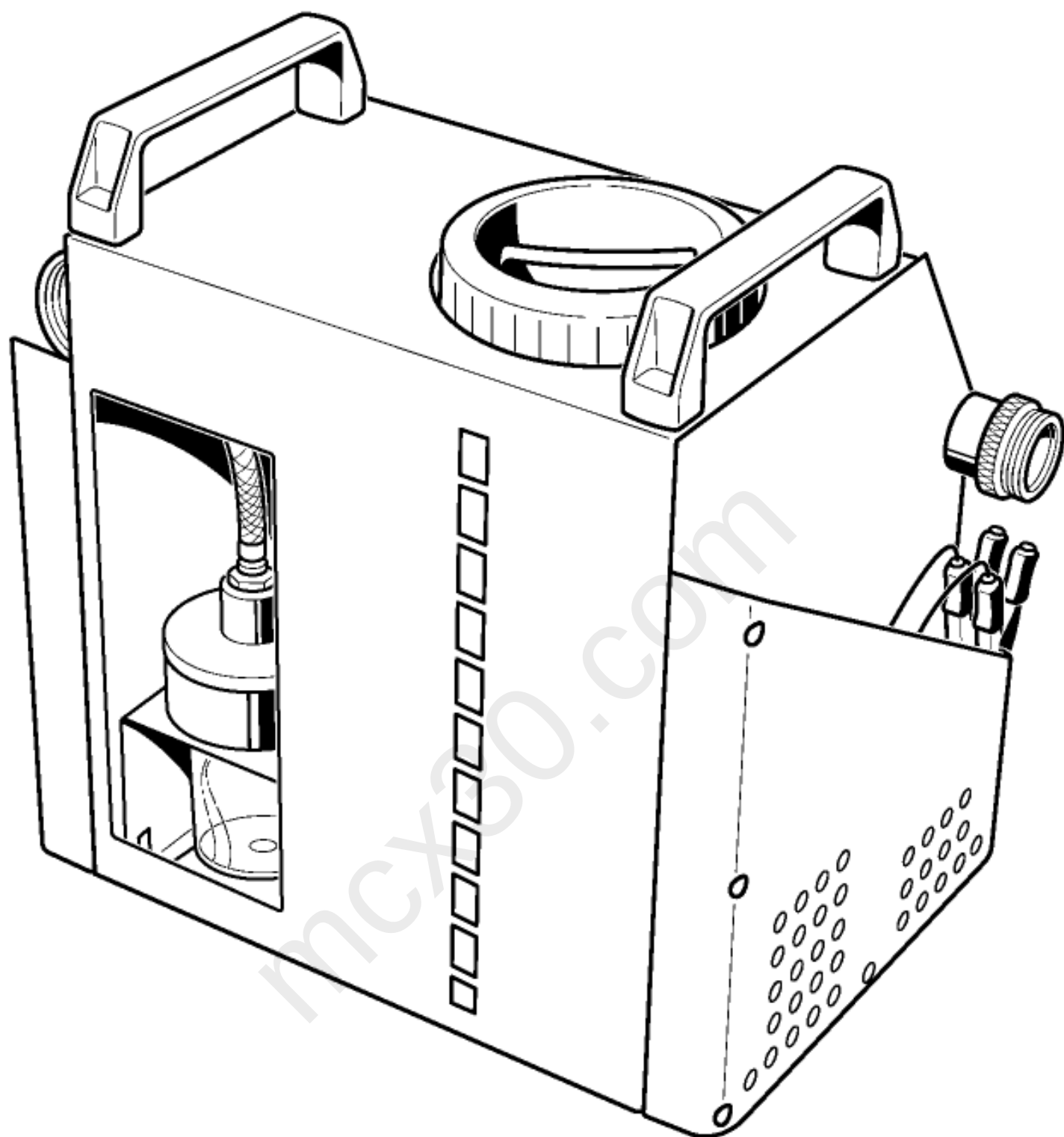
DESCRIPTION OF THE TOOL MOT. 1700

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(1)	Connection control between the vehicle's cooling system and tool Mot. 1700
(2)	Pressure gauge
(3)	Electric pump air inlet and outlet selection control
(4)	Vacuum or pressure creation selection control
(5)	Electric supply
(6)	Socket for expansion bottle cap
(7)	Electric pump protection fuse
(8)	Electric pump stop/start switch
(9)	Connecting pipe between the vehicle's cooling system and tool Mot. 1700



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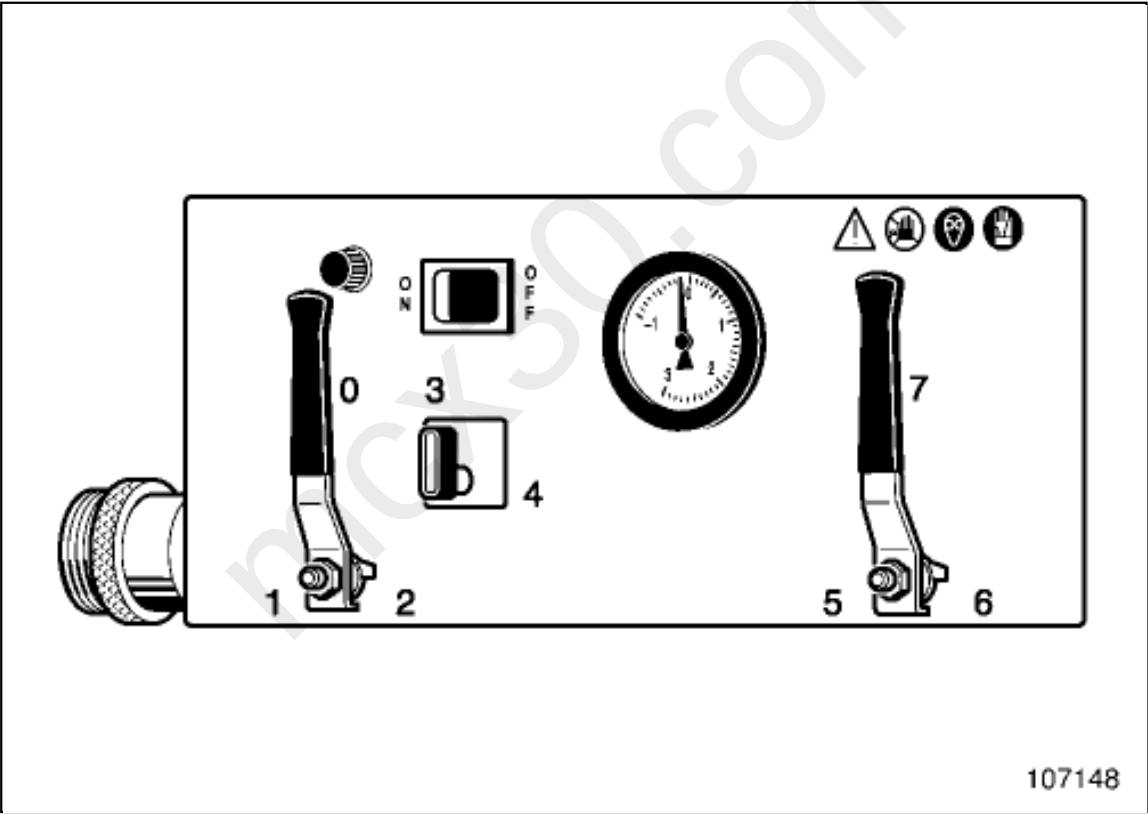
(10)	Decanting bottle
(11)	Indicator for reading the coolant level in the reservoir
(12)	Reservoir filling opening

1. FAULT FINDING PROCEDURE FOR THE ENGINE COOLING SYSTEM



CAUTION
Failure to observe the following procedure can lead to the destruction of the engine.

1- FAULT FINDING PROCEDURE FOR THE EXPANSION BOTTLE CAP



Position:

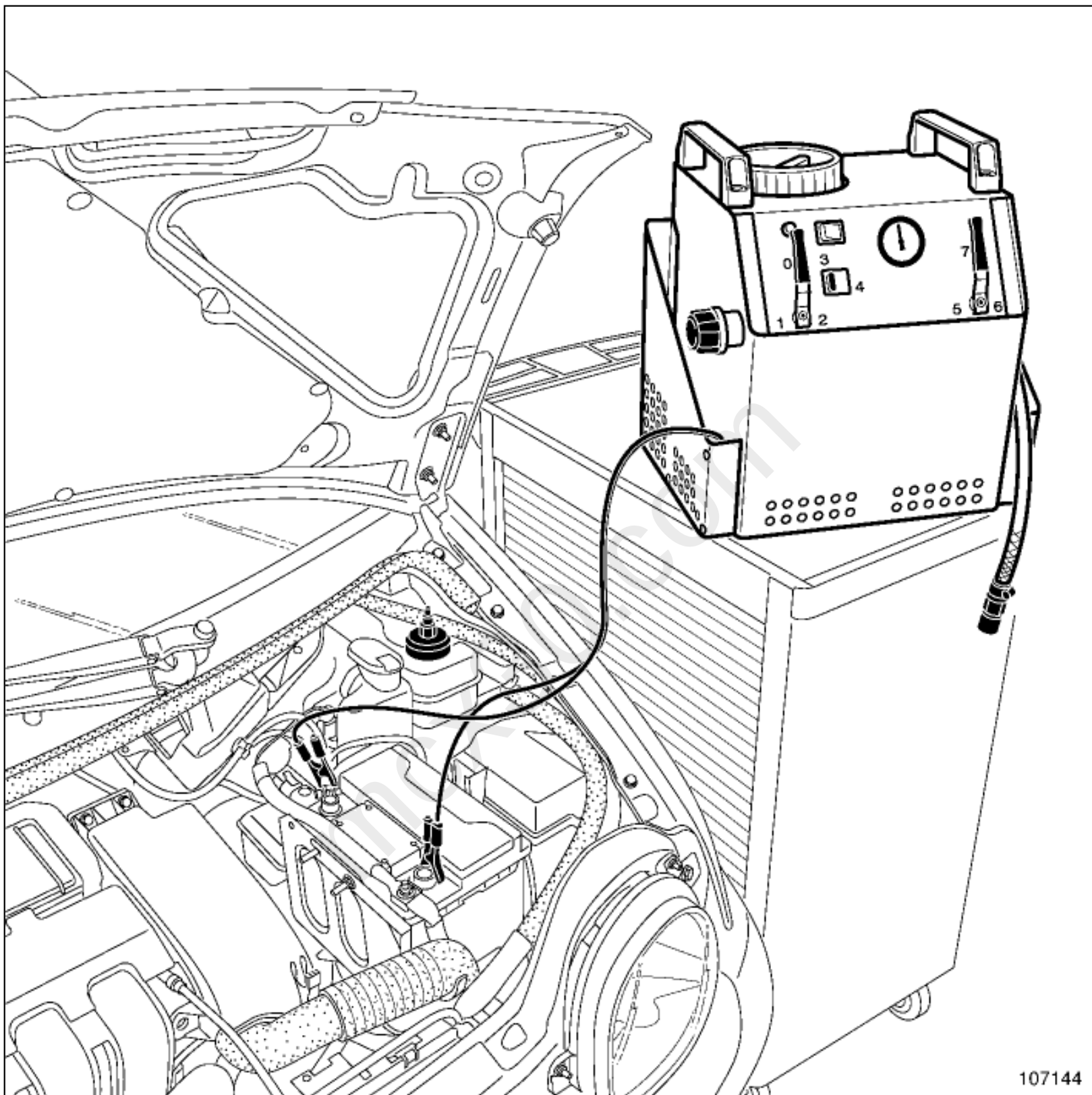


Control(1) to "0" ,

Control(2) to "3" ,

Control(3) to "7" ,

The on/off switch(4) to "OFF" .



Screw on:

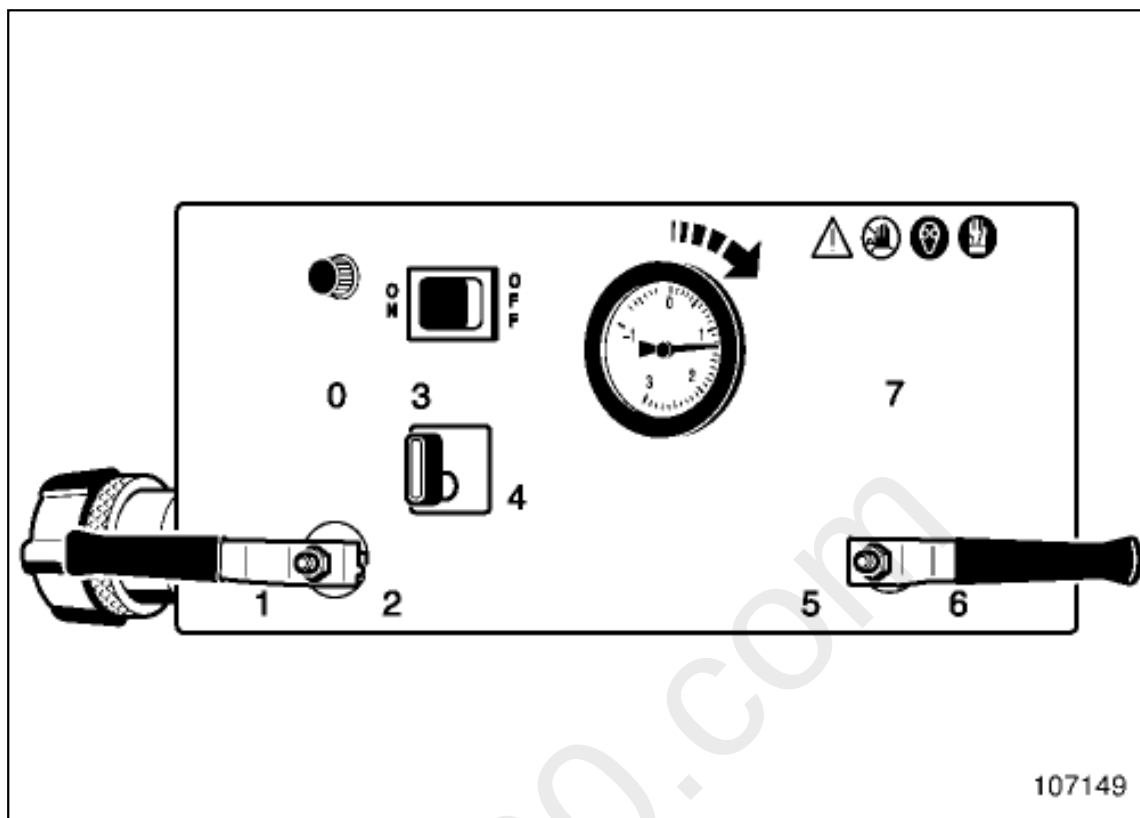


The expansion bottle cap at(5) on the toolFault finding and filling - bleeding the cooling circuit.(Mot. 1700) ,



The adapter plug(6) (without the pipe) to the vehicle expansion bottle.

Connect the wires to the battery, observing the correct polarity.



Position:



Control(1) to "1" ,



Control(3) to "6" ,



The on/off switch(4) to "ON" .

Note:



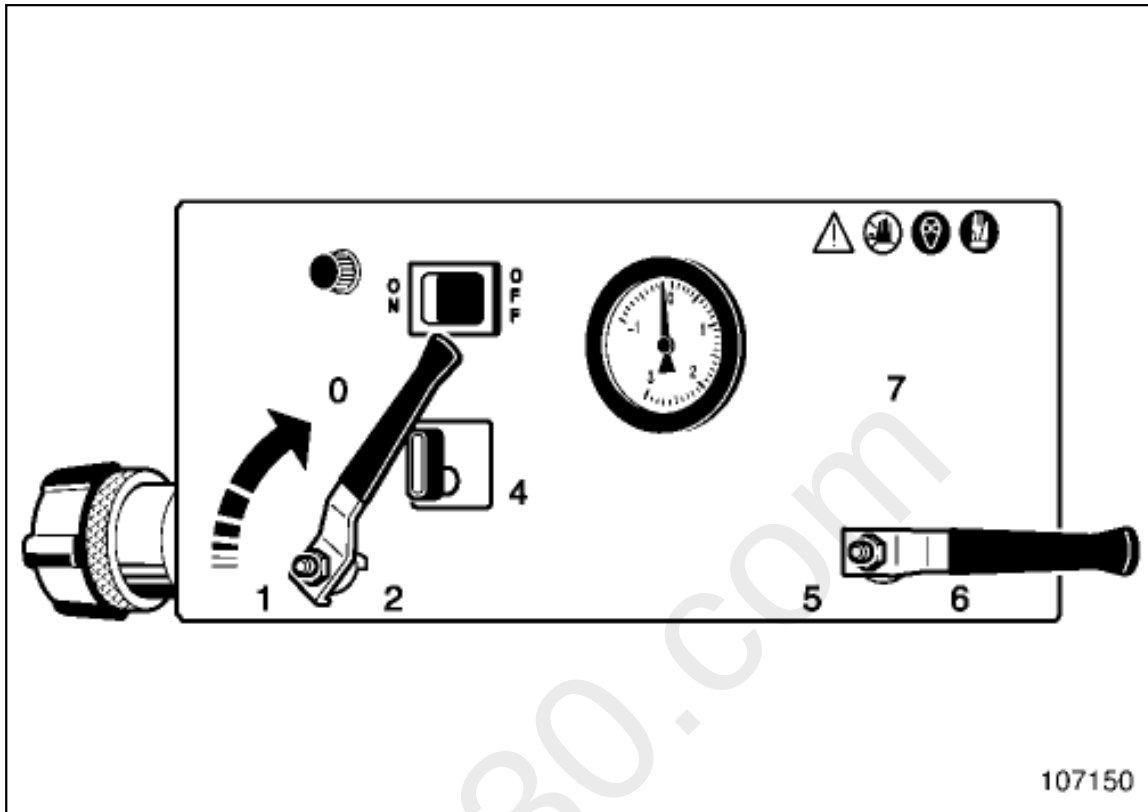
The pressure gauge needle should point to a pressure value and should settle at the expansion bottle valve cap valve rating. If the needle does not indicate the rating or exceeds 2 bar, replace the expansion bottle cap because the rating is incorrect.

Set the on/off switch(4) to "OFF" .

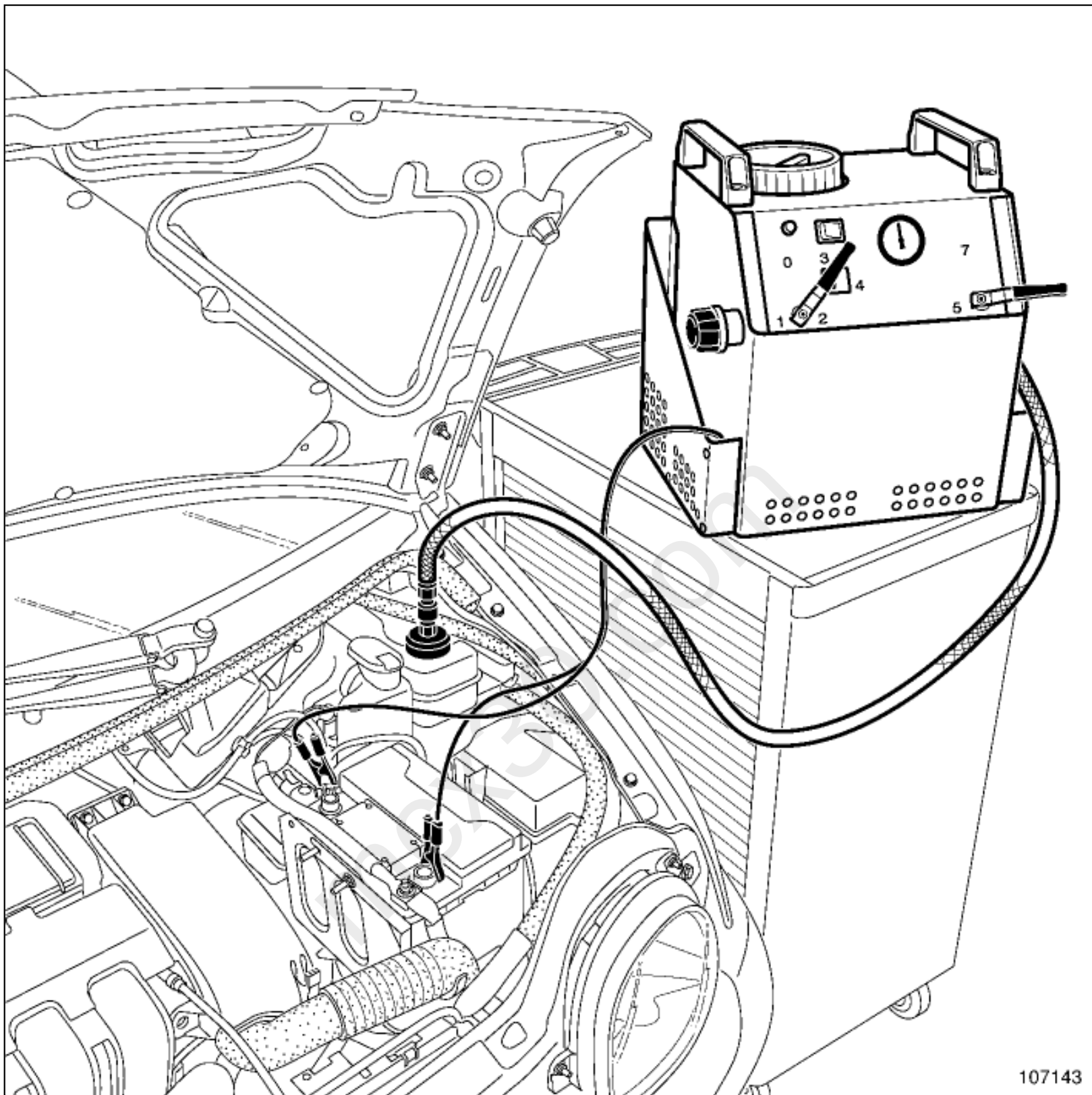
Note:



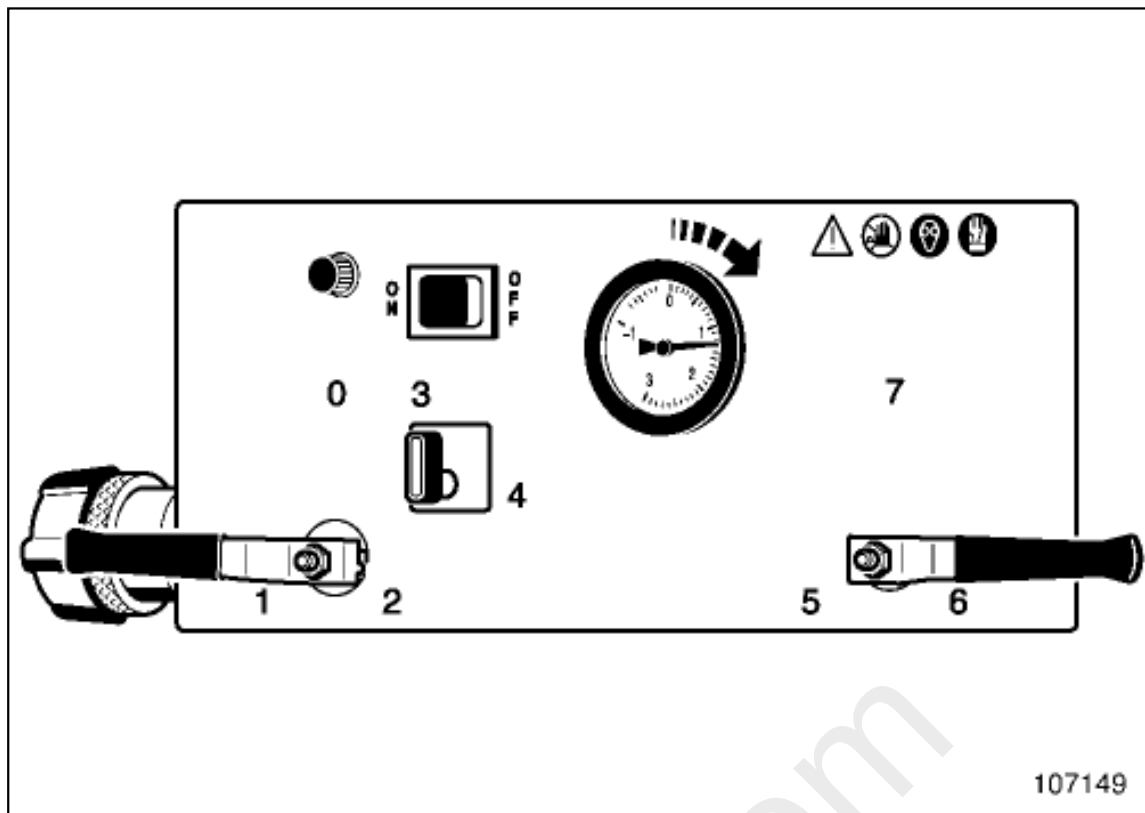
The needle of the pressure gauge must remain at the expansion bottle cap valve rating. If the needle drops back down, replace the expansion bottle cap as it is leaking.



Dump the pressure by turning the control(1) in the direction shown by the arrow.



Connect the pipe of the tool Fault finding and filling - bleeding the cooling circuit. (Mot. 1700) to the adapter plug.



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Position:



Control(1) to "1" ,



Control(3) to "6" ,



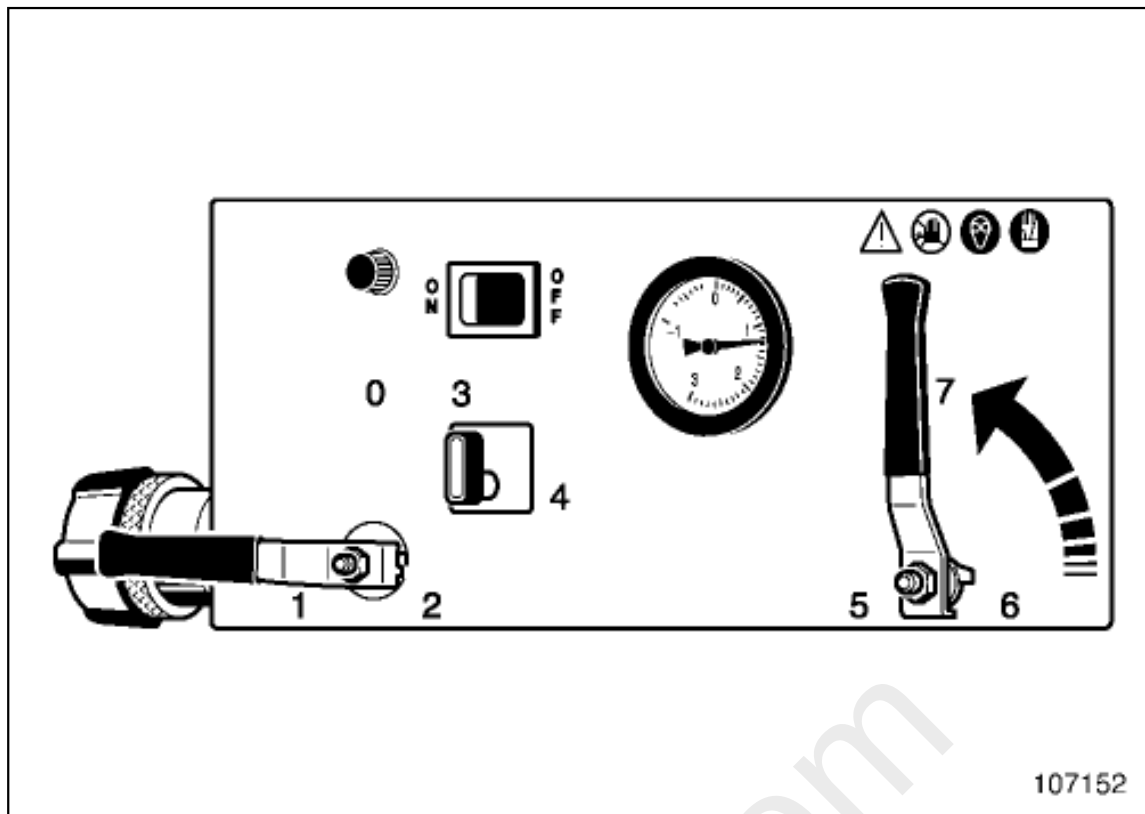
The on/off switch(4) to "ON" .

Note:



The pressure gauge needle should point to a pressure value and should settle at the expansion bottle valve cap valve rating.

Set the on/off switch(4) to "OFF" .



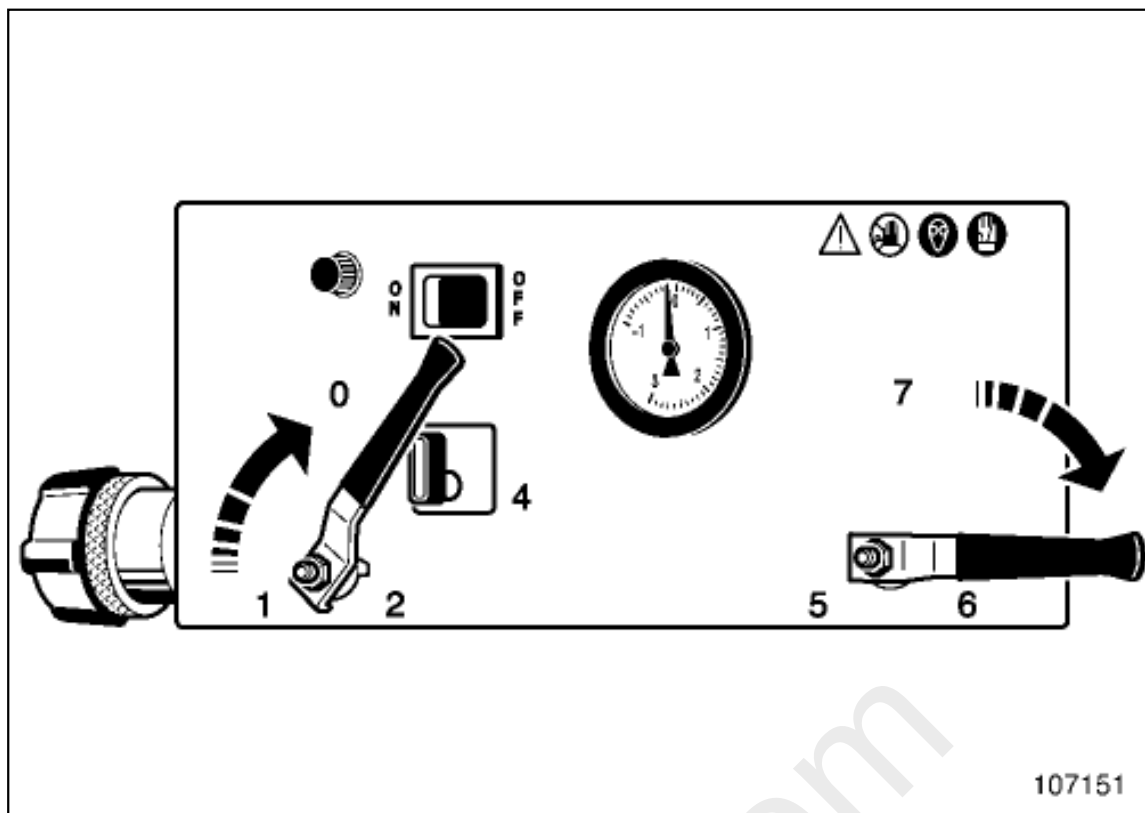
Set the control(3) to "7" .

Note:



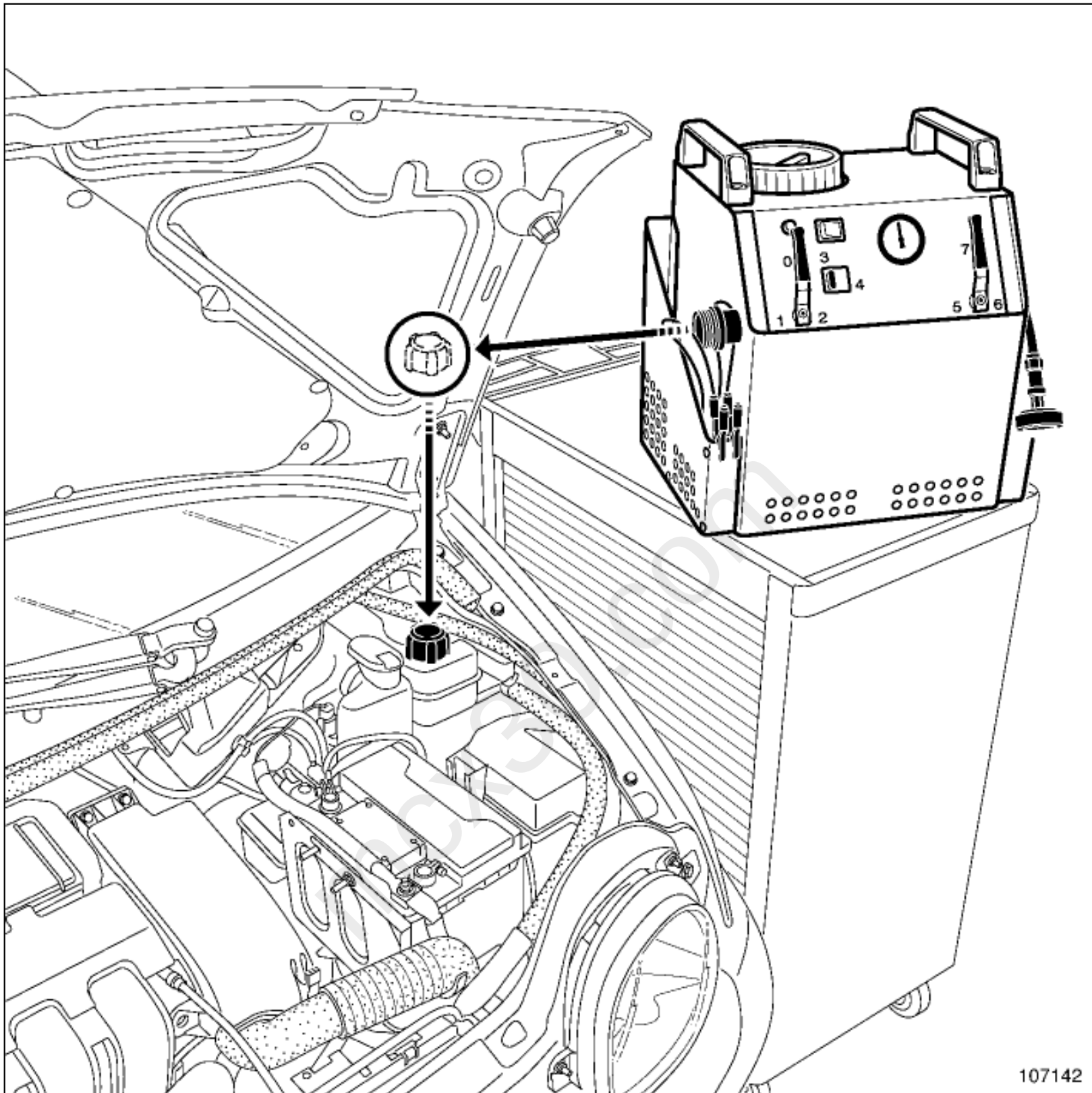
The pressure gauge needle should not move. If it does not, find and repair any leaks on the cooling system.

After repair, repressurise the cooling circuit (by restarting the previous operations).



Set the control(3) to "6" .

Gradually dump the pressure by turning the control(1) in the direction shown by the arrow.



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Disconnect the tool Fault finding and filling - bleeding the cooling circuit.(Mot. 1700) from the vehicle.

Refit the expansion bottle cap.

2. FILLING THE COOLING CIRCUIT



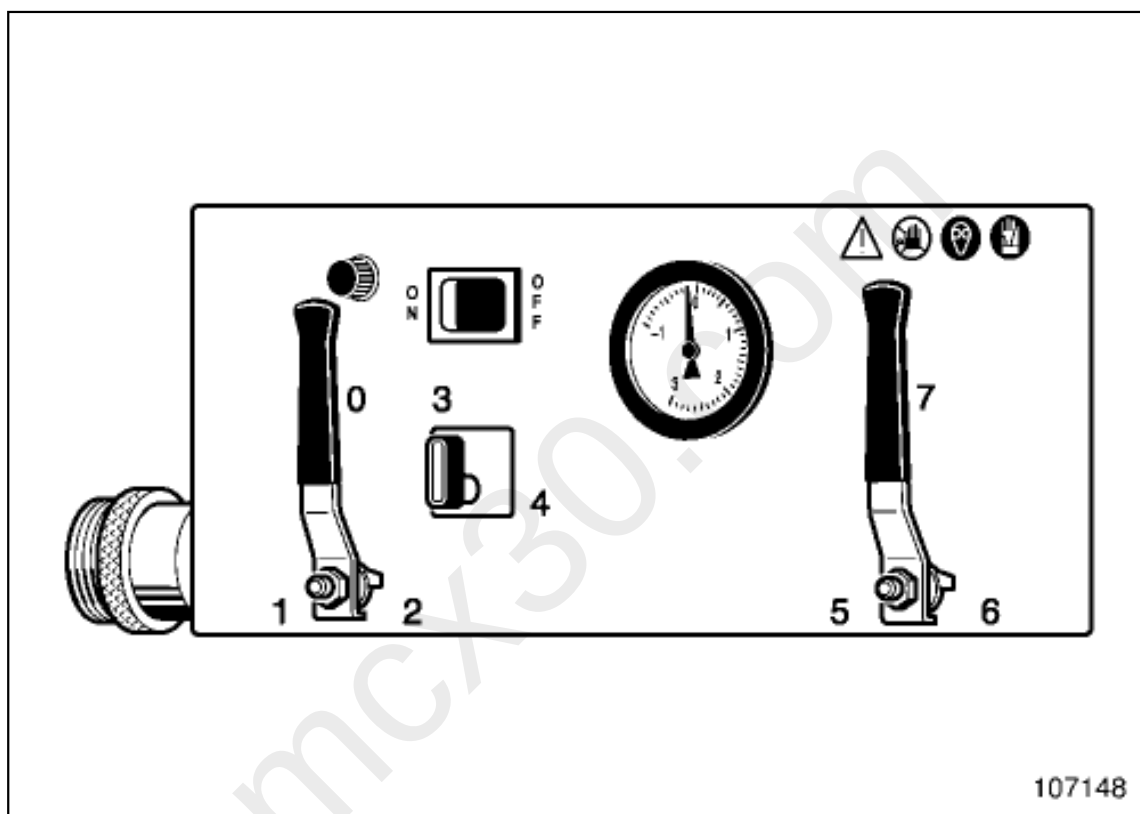
This filling operation can be carried out after the cooling circuit has been totally or partially drained, and does not need the bleed screws to be open. The cooling circuit is filled by vacuum.



CAUTION

Failure to observe the following procedure can lead to the destruction of the engine

1- CREATING A VACUUM IN THE ENGINE COOLING SYSTEM



Position:



Control(1) to "0" ,



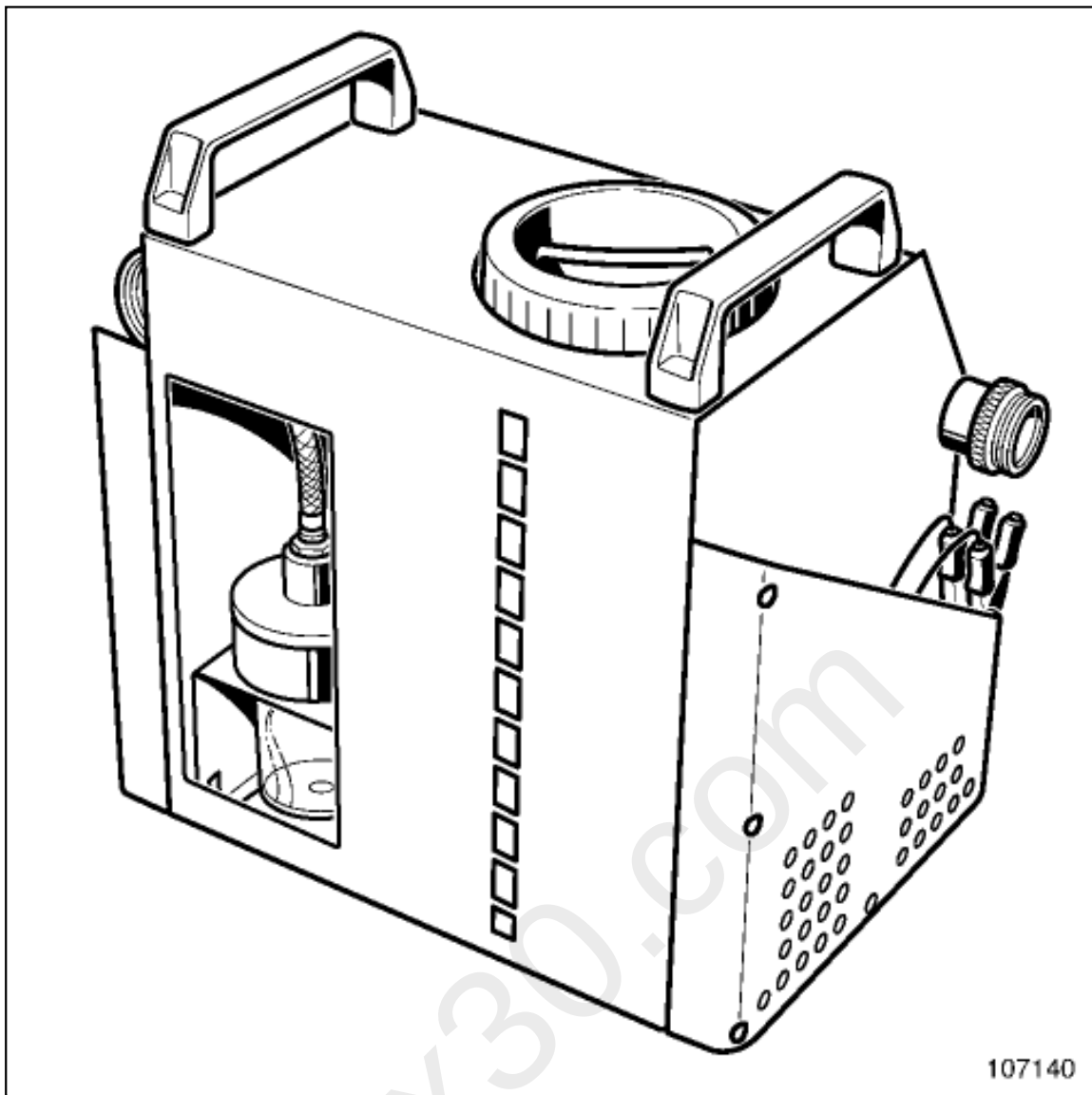
Control(2) to "3" ,



Control(3) to "7" ,



The on/off switch(4) to "OFF" .



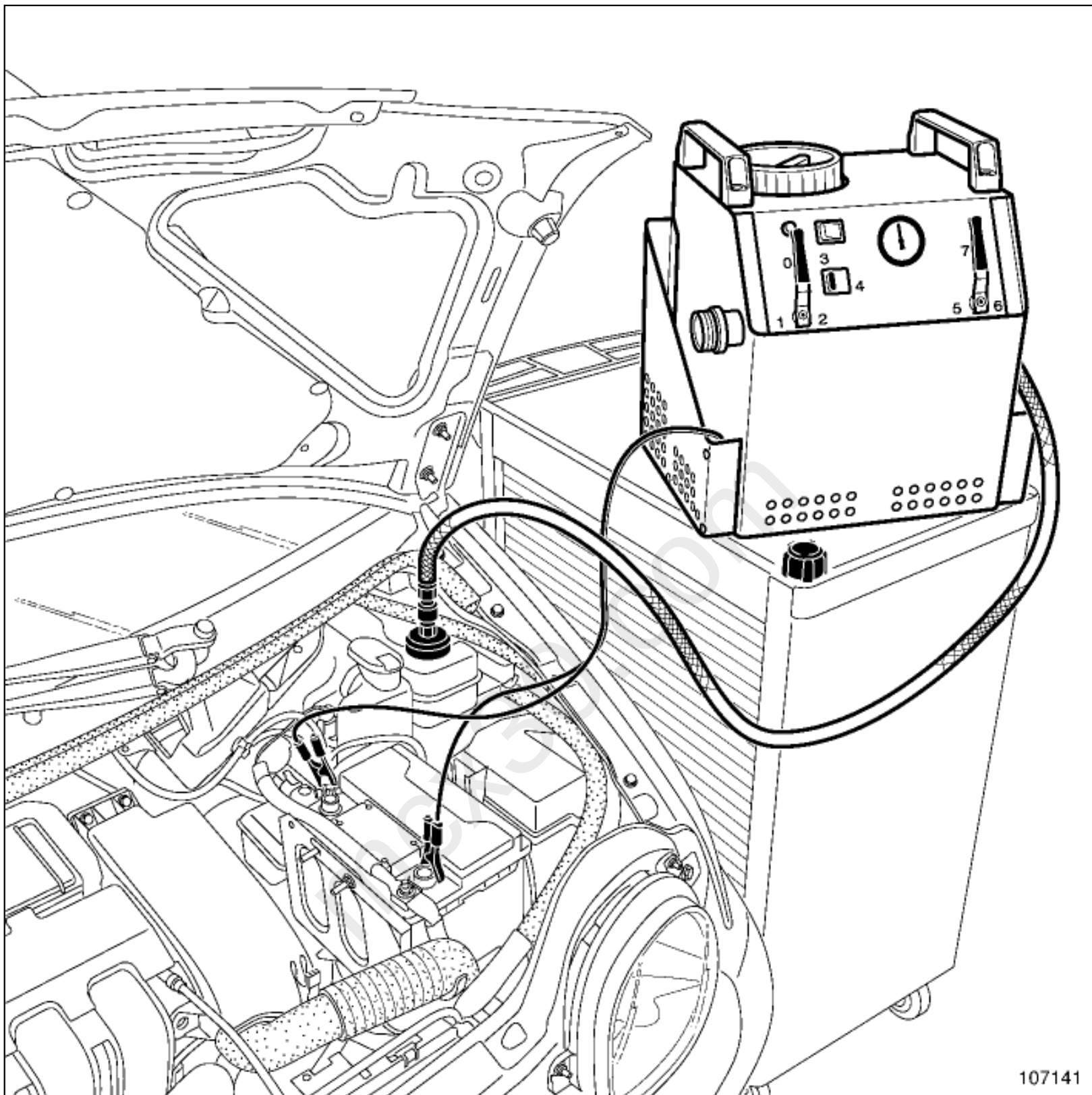
Check that:



The decanting bottle(5) is empty,



There is enough coolant in the reservoir of the toolFault finding and filling - bleeding the cooling circuit.(Mot. 1700) .



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Fit the adapter plug to the vehicle's expansion bottle.

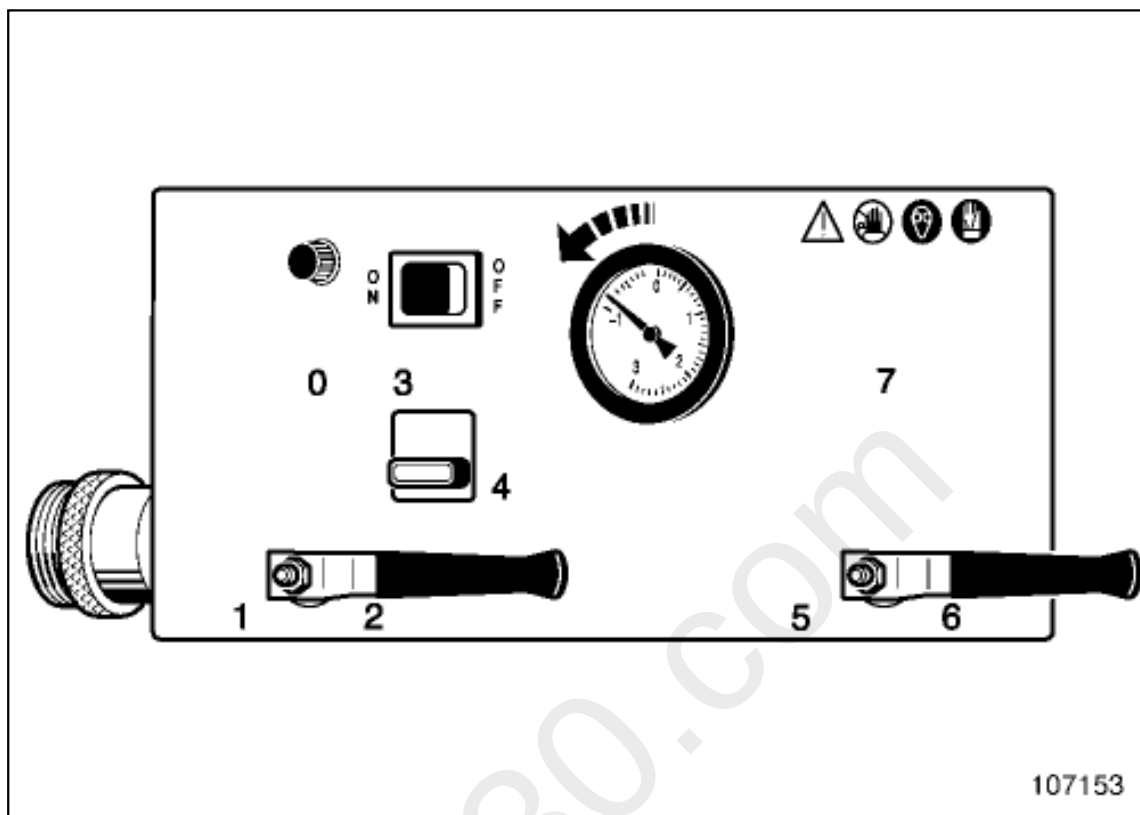
Connect the pipe of the tool Fault finding and filling - bleeding the cooling circuit. (Mot. 1700) to the adapter plug.

Connect the wires to the battery, observing the correct polarity.



Note:

During the operation, do not fit the expansion bottle cap on tool Mot. 1700



Position:



Control(1) to "2" ,



Control(2) to "4" ,



Control(3) to "6" ,

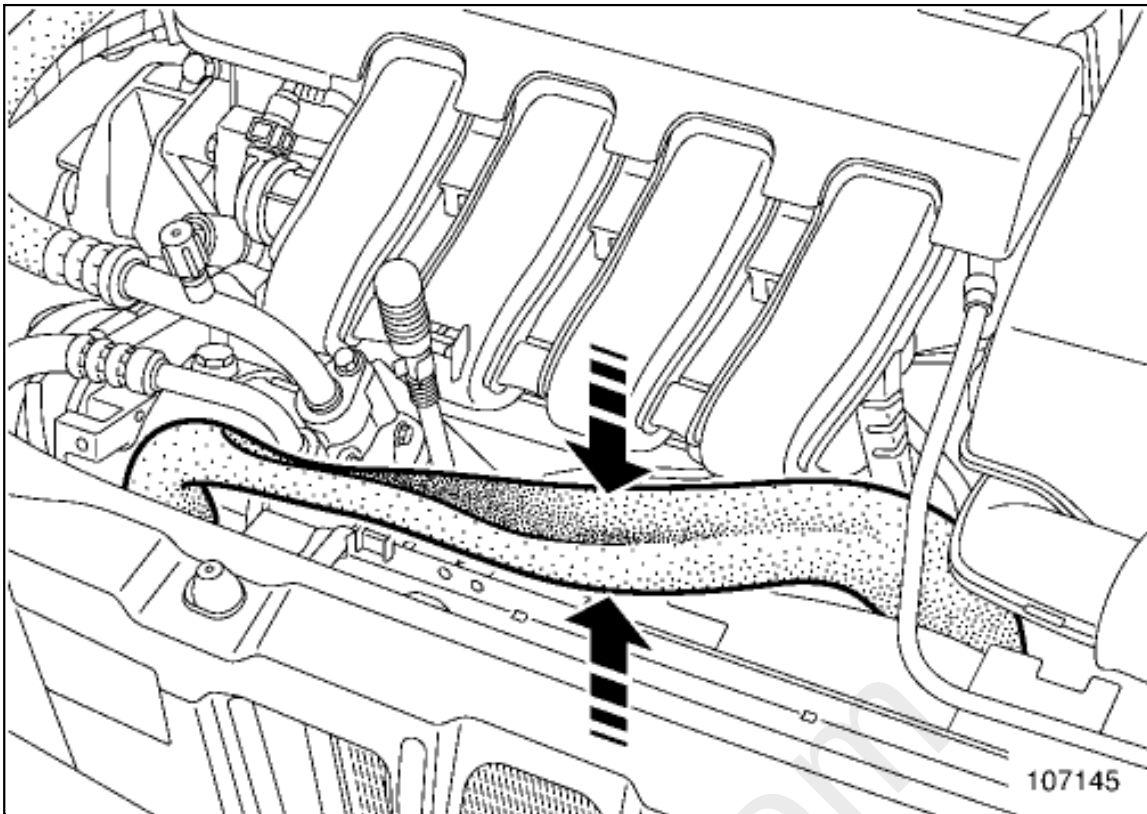


The on/off switch(4) to "ON" .



Note:

The pressure gauge needle should show a vacuum.

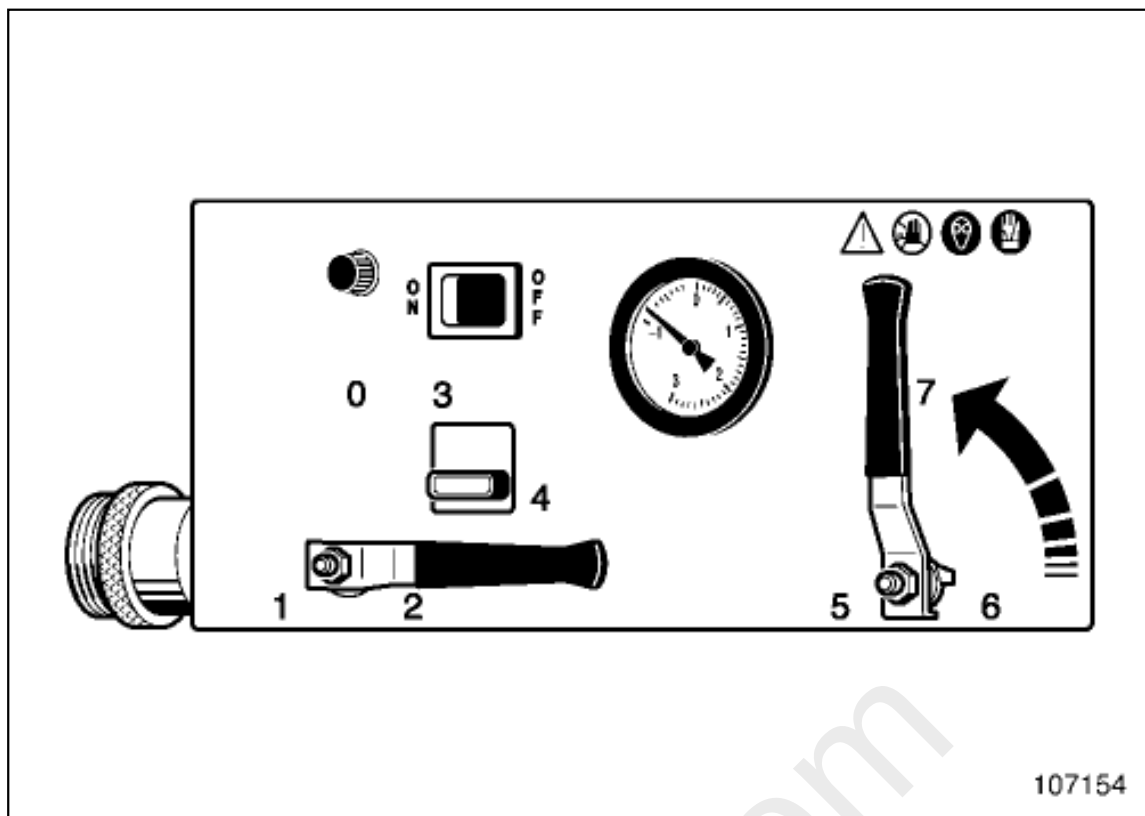


The cooling system hoses flatten.

Note:



If replacing a part which not does require the cooling system to be completely drained, it is essential to position the switch (4) to "OFF" and the control (3) to "7" when the coolant starts to rise in the connecting pipe between the expansion bottle and Mot. 1700.



When the pressure gauge needle shows a vacuum of between 0.85 and 0.95 bar (depending on the vehicle), position:

■

The on/off switch(4) to "OFF" ,

■

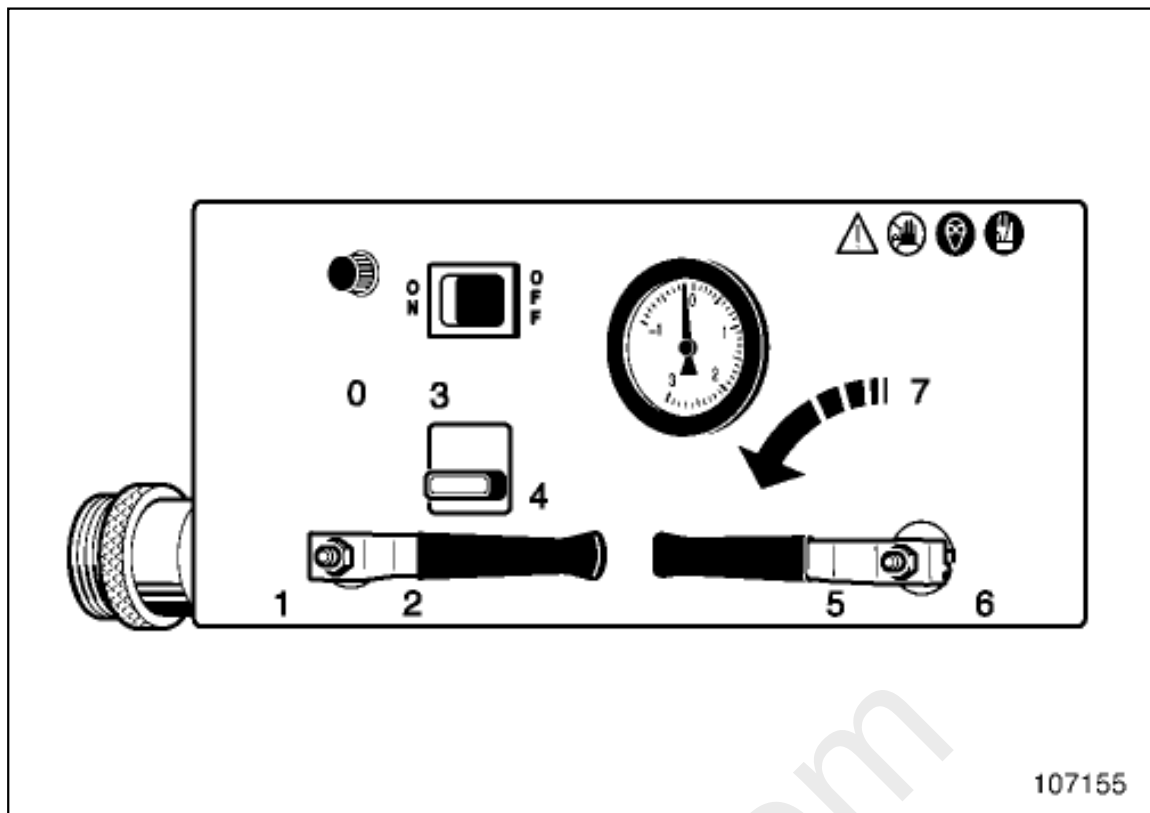
Control(3) to "7" .

Note:

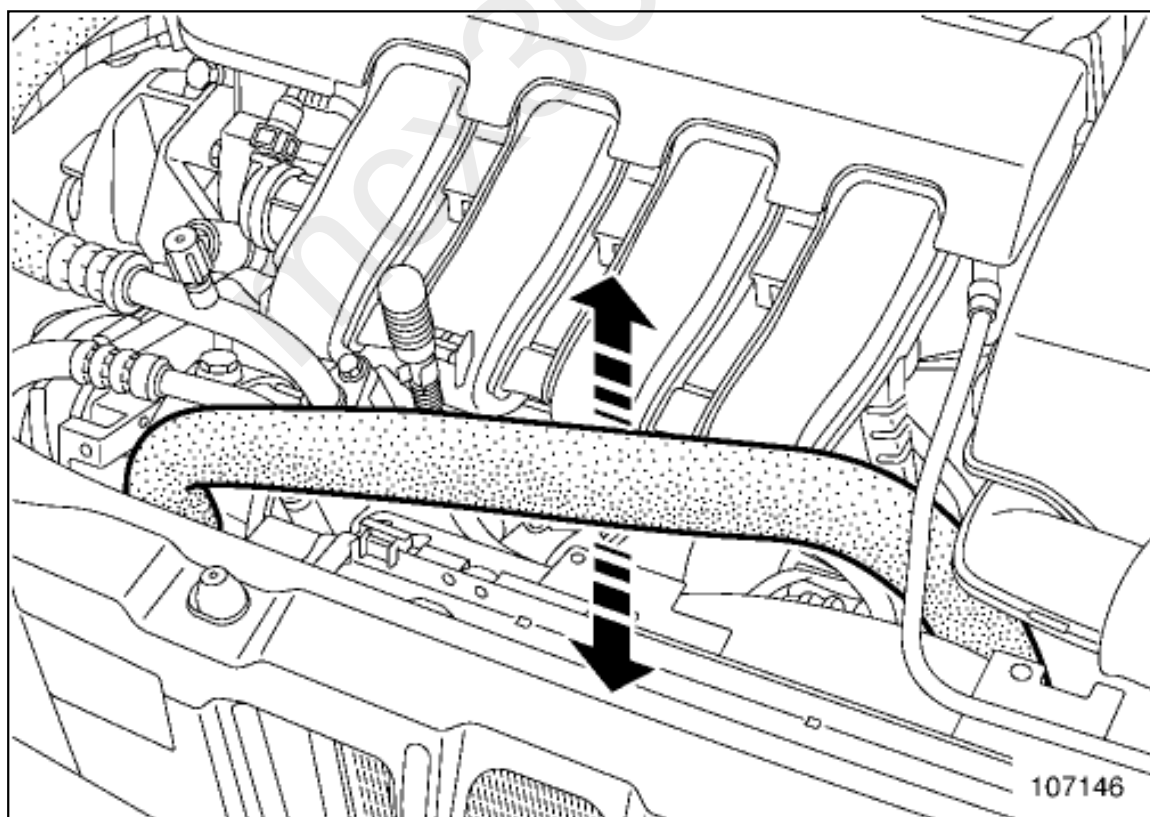


The pressure gauge needle should not move. If it does not, find and repair any leaks on the cooling system.

After repair, create a vacuum in the cooling circuit (by restarting the previous operations).



Set the control(3) to "5" .



The hoses return to their original form.

The pressure gauge needle returns to zero.

Note:

For cooling systems with a coolant capacity greater than 10 litres, stop filling the cooling system before the reservoir is empty.



To carry out this operation:



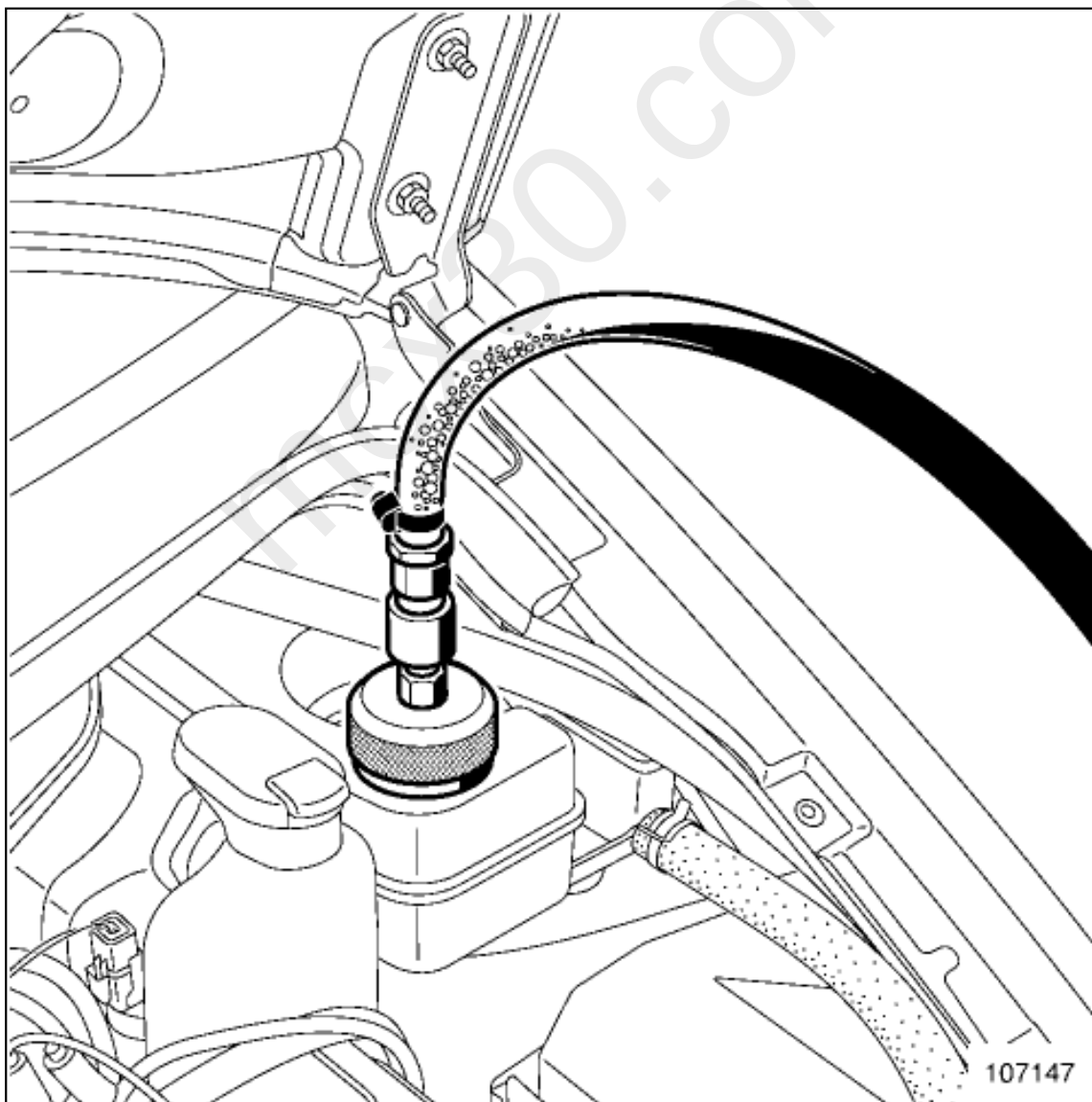
Position the control (3) to "7" ,



Readjust the coolant level in the reservoir.



Set the control (3) to "5" to fill the cooling system again.



The cooling system is full once bubbles appear in the connecting pipe(7) between the expansion bottle and toolFault finding and filling - bleeding the cooling circuit.(Mot. 1700) .

Set the control(2) to "3" .

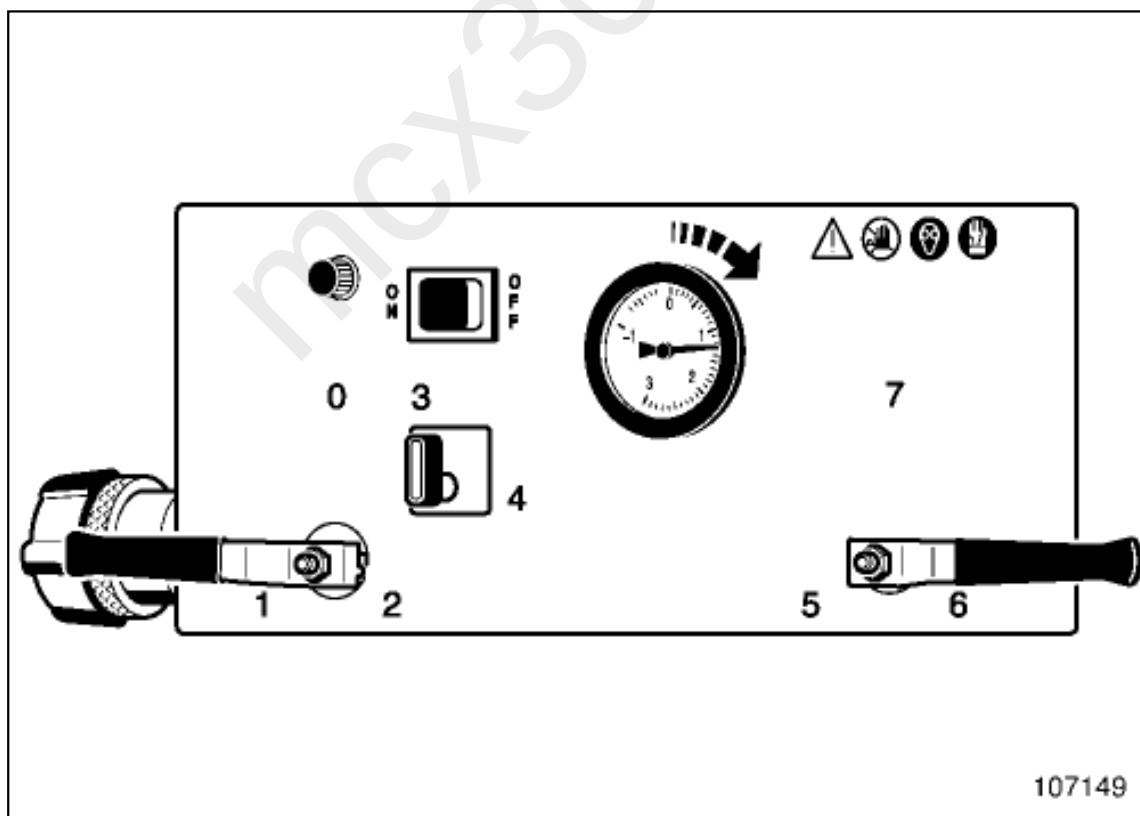
Disconnect the pipe (7) from the adapter plug.

Remove the adapter plug(6) .

Connect the adapter plug to the pipe to empty the remaining liquid in the pipe into the reservoir of the toolFault finding and filling - bleeding the cooling circuit.(Mot. 1700) .

3- PRESSURIZING THE COOLING SYSTEM

Refit the adapter plug and the pipe to the vehicle's expansion bottle in order to pressurise the cooling circuit to check the cooling circuit sealing.



Refit the expansion bottle cap(8) on the toolFault finding and filling - bleeding the cooling circuit.(Mot. 1700) .

Position:



Control(1) to "1" ,



Control(2) to "3" ,



Control(3) to "6" ,



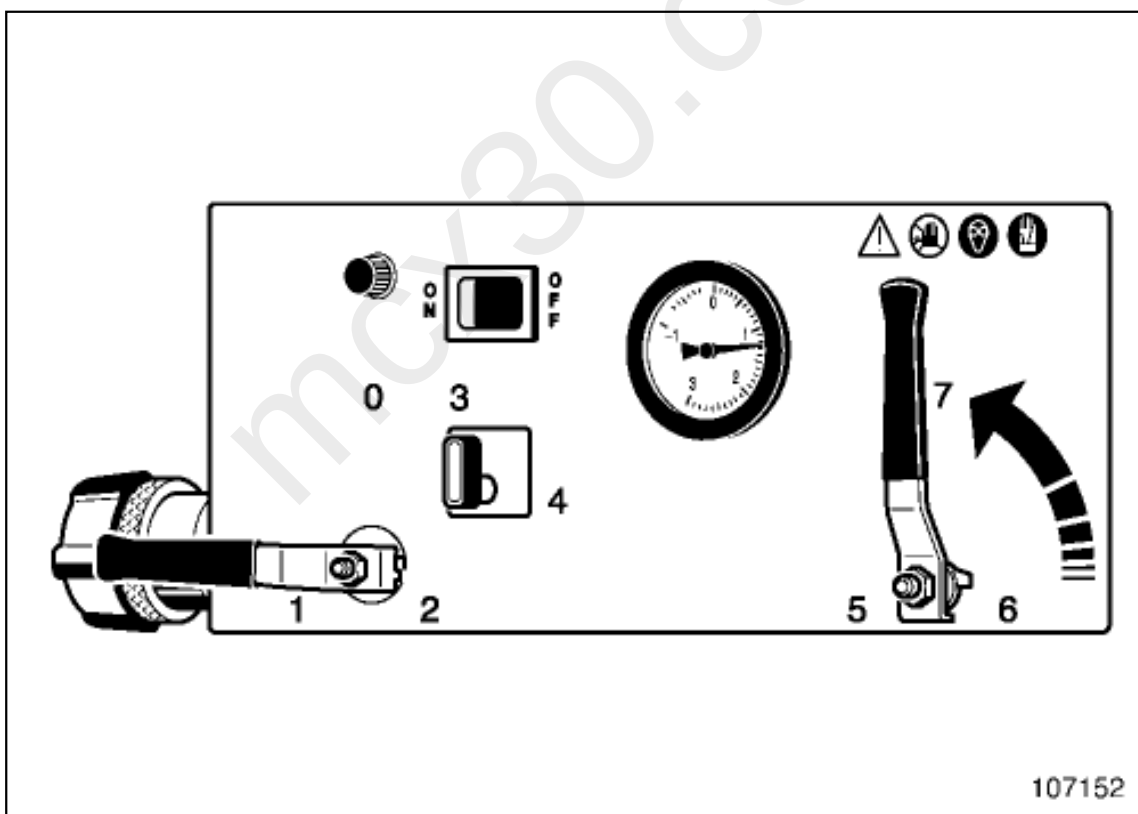
The on/off switch(4) to "ON" .

Note:



The pressure gauge needle should point to a pressure value and should settle at the expansion bottle valve cap valve rating.

Set the on/off switch(4) to "OFF" .



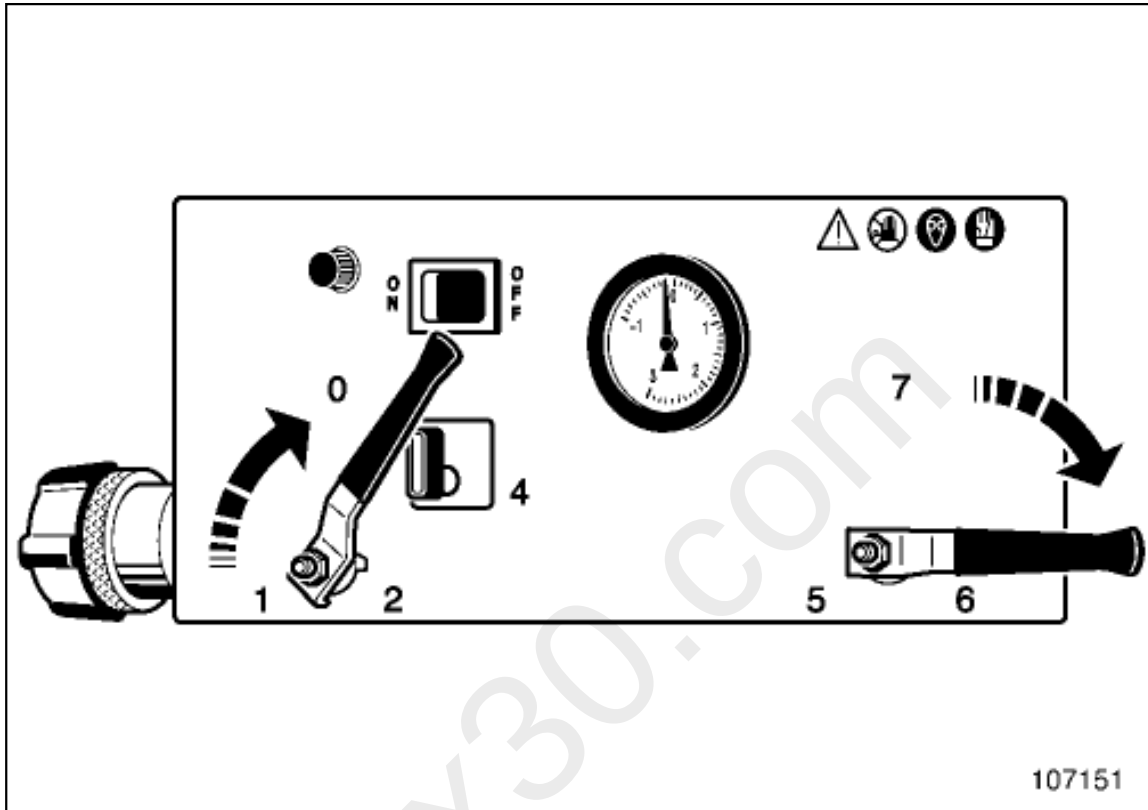
Set the control(3) to "7" .

Note:



The pressure gauge needle should not move. If it does not, find and repair any leaks on the cooling system.

After repair, repressurise the cooling circuit (by restarting the previous operations).

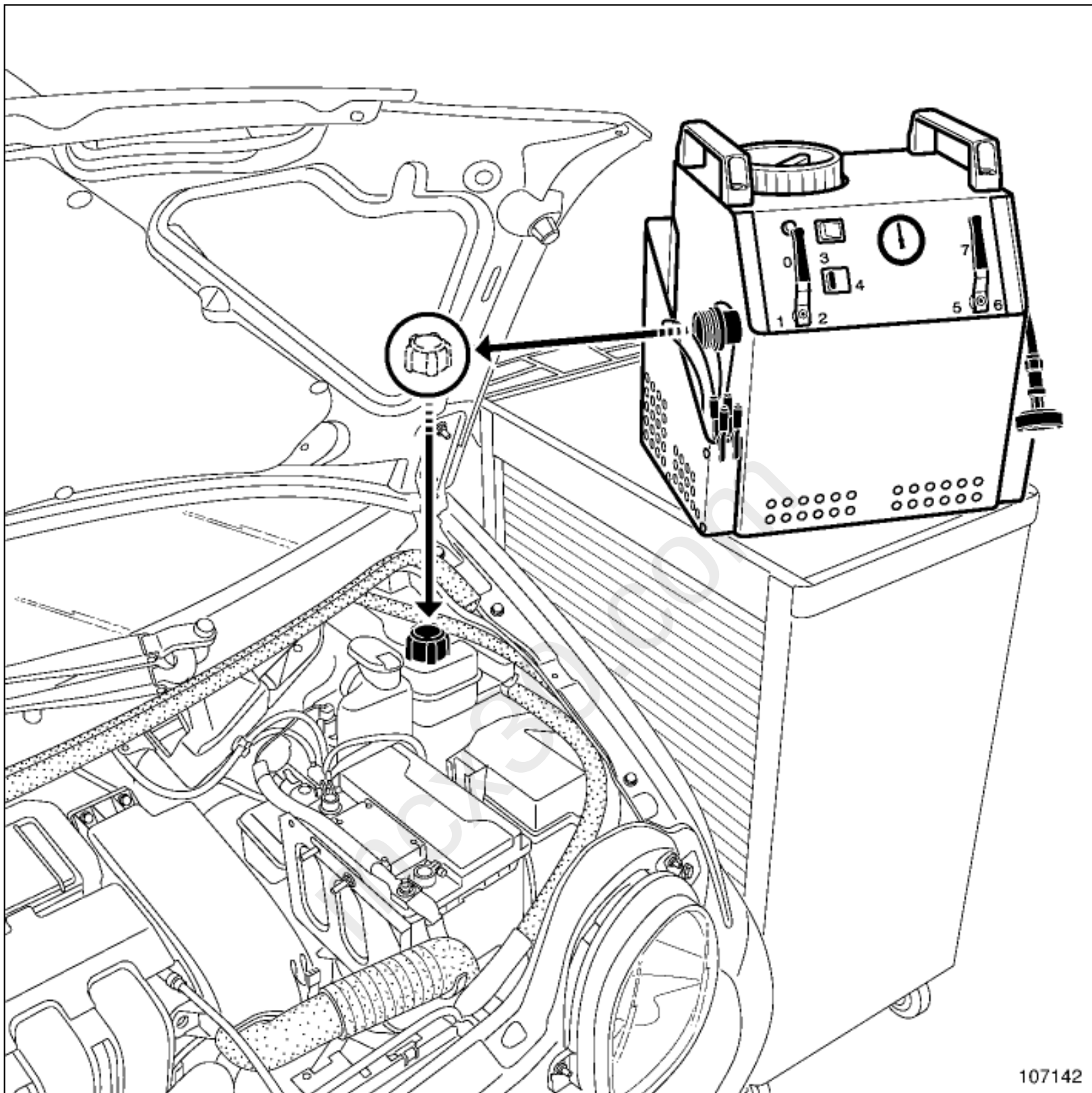


Set the control(3) to "6" .

Gradually dump the pressure by turning the control(1) in the direction shown by the arrow.

Disconnect the tool Fault finding and filling - bleeding the cooling circuit.(Mot. 1700) from the vehicle.

Fill the expansion bottle to overflow (only after a total draining of the cooling system).



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Refit the expansion bottle cap.

Bleed the engine cooling system([see 19A, Cooling, Cooling system: Draining - Refilling](#)) .