



**AdBlue/DEF module
cleaning kit**

User manual

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Rev. 01



AdBlue/DEF module cleaning kit

User manual



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1 General information

1.1 PRODUCT DESCRIPTION

Equipment for cleaning the crystallised AdBlue/DEF residues in the dosing module, the injector line and the injector.

1.2 CONTENT

1.3. Hoses.

2a. Tank 0.4l.

2b. Tank 1.5l.

4. Adapter to connect the compressed air intake to the AdBlue/DEF module. (4a and 4b).

5. Adapter to connect the compressed air supply from the vehicle to the AdBlue/DEF module.

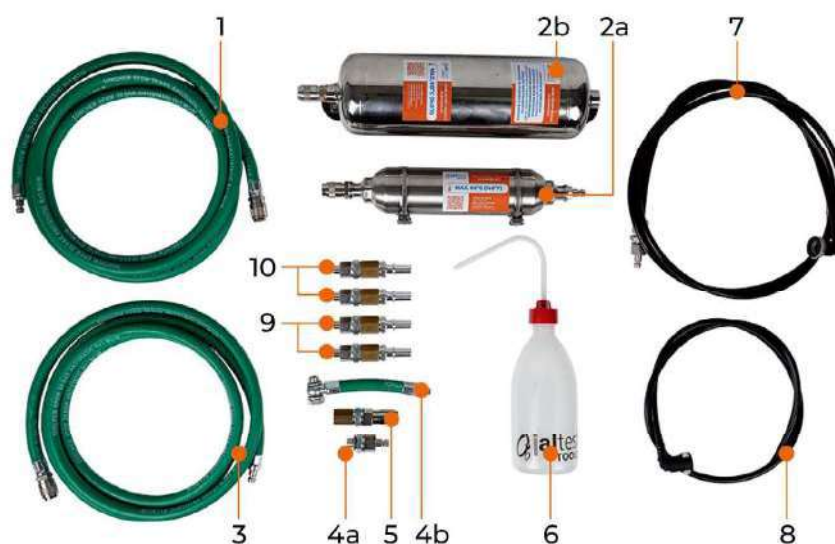
6. Filling bottle.

7. Adapter for the AdBlue/DEF inlet to the module.

8. Adapter for AdBlue/DEF return to the module.

9. 3/8" adapters for the connection of the inlet and return pipes to the AdBlue/DEF tank.

10. 5/16" adapters for the connection of the inlet and return pipes to the AdBlue/DEF tank.



1.3 APPLICATION

- NoNOX system (MAN TGL, TGM, TGS, TGX and Euro 6 buses with AdBlue Emitec system).
- AdBlue/DEF Emitec system in vehicles with Cummins engine.
- Albonair AdBlue/DEF system (VOLVO, RENAULT UD Trucks and other Euro 6 vehicles).
- Bosch Denoxtronic 2.2 and Denoxtronic 6-HD AdBlue/DEF system (DAF, IVECO, MAN, other Euro 6 vehicles, agricultural equipment, OHW equipment, etc).
- Cummins Ecofit UL2 AdBlue/DEF system (DAF, MERCEDES-BENZ, SCANIA, other Euro 6 vehicles, agricultural equipment, OHW equipment, etc.)



1.4 SAFETY PRECAUTIONS

The following safety precautions must be taken into account in order to prevent accidents and/or injuries:

- Place the vehicle on a flat surface.
- Activate the parking brake.
- Place the gearshift level in neutral position.
- Avoid contact with parts that might remain too hot or that are in movement.
- Use proper workwear.



2 Procedure

2.1 ADBLUE/DEF EMITEC SYSTEM (NONOX)

2.1.1 PREVIOUS STEPS

a. Carry out the AdBlue/DEF circuit draining test with the diagnostics tool.

NoNOx system >> System checks “SYSTEM FILLING AND PURGE”

b. Disassemble the upper, front and side protective plates.



c. Disassemble the plate supports.





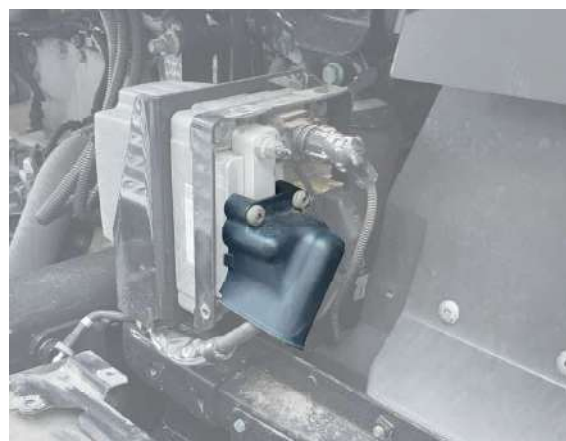
d. Disassemble the AdBlue/DEF injector fixing and remove the injector.

- Disassemble clamp.
- Unscrew the fitting nut.
- Remove the AdBlue/DEF injector and screw it again in the fitting nut.
- Clean the AdBlue/DEF injector nozzle.



Note: for your comfort during the subsequent steps, disassemble the NOx sensor fixings.

e. Disassemble the AdBlue/DEF module protections.



2.1.2 CLEANING OF THE ADBLUE/DEF OUTLET CIRCUIT

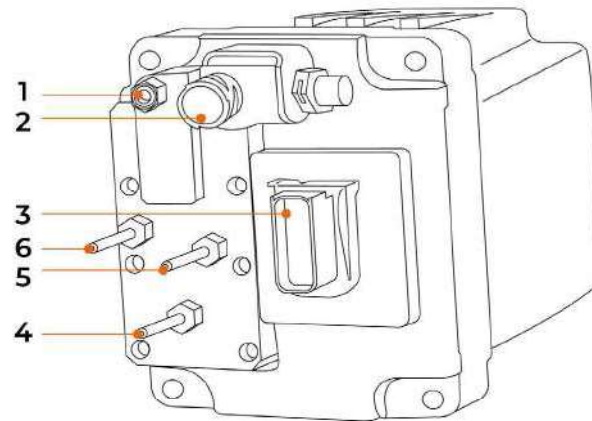
a. Evacuate the pneumatic supply pressure for improved comfort when disconnecting or removing lines through which compressed air flows.

b. Disassemble the compressed air intake connection to the AdBlue/DEF module (1).

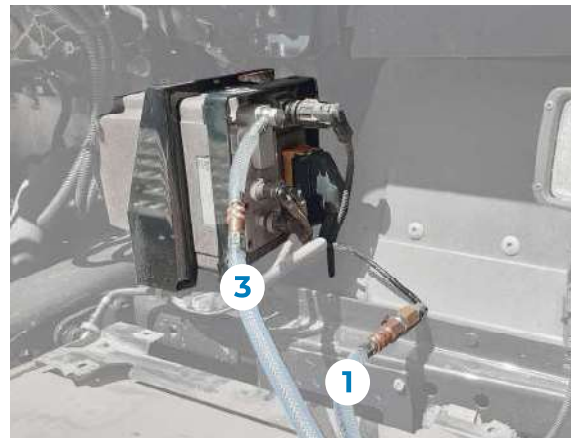
Note: if the vehicle has pressurised air in the circuit, when removing the connection, this compressed air will be lost.



1. Compressed air intake.
2. Electrical connector/Compressed air flow control valve.
3. Electrical connector / AdBlue/DEF pump heater.
4. AdBlue/DEF intake.
5. AdBlue/DEF and air exhaust/mixture.
6. AdBlue/DEF return.



c. Connect the adapters “4” (4a or 4b as appropriate) and “5” in the compressed air intake of the AdBlue/DEF module (1) and in the compressed air exhaust of the vehicle. Next, join a hose (“1” and “3”) in each adapter but without connecting them to the tank “2” yet.

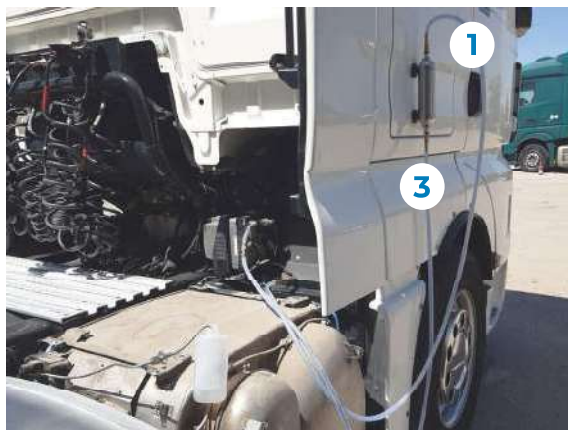


d. Fill tank “2a” with 250ml of hot distilled water (MAX. 60°C/140°F) from the upper part, using the filling bottle “6”.





- e. Connect the hoses “1” and “3” to tank “2a”.



- f. Start the engine and maintain it until the compressed air circuit is charged.
- g. Perform the corresponding action as many times as necessary using the diagnostics tool until only compressed air is expelled through the injector nozzle. Use a container or measuring cylinder to collect 250ml of water approximately that will be expelled through the injector.

NoNOx system >> System checks “AIR CIRCUIT CHECK”

- h. Carry out the pneumatic installation again prior to tests. Assembly the connection (1) of compressed air intake to the AdBlue/DEF module.

Note: if the compressed air circuit is not depressurised, then removing the connections, this compressed air will be lost.

2.1.3 CLEANING FROM THE ADBLUE/DEF INLET CIRCUIT TO THE MODULE

- a. Start the engine and maintain it until the compressed air circuit is pressurised.
- b. Disconnect the connections (4) and (6) from the AdBlue/DEF module.
- c. Place a container or tube in the nozzle (6) to collect the amount of return liquid.
- d. Connect the hose “7” with quick coupling of 3/8” to the AdBlue/DEF intake connector (4). Connect the other end to the quick connector at the bottom of the tank “2a”.

Previously, the tank must be empty and without the hoses of the previous test.

- e. Fill tank “2a” with distilled water from the upper part (MAX. 60°C/140°F). Take into account that the amount entered will be approximately the one that is dosed.



f. Carry out the average dosage check. Use a container or measuring cylinder to collect the water to be dosed through the injector.

NoNOx system >> System checks >> ADBLUE/DEF DOSING >> “MEDIUM DOSING”



2.1.4 SUBSEQUENT STEPS

- a.** Check that there are no errors memorised in the Control Unit.
- b.** Disassemble the AdBlue/DEF module cleaning equipment and rinse all components including the tank with hot water.
- c.** Connect the AdBlue/DEF module connections and check the tightness of both the module and the connections.
- d.** Assemble the plastic protections of the AdBlue/DEF module.
- e.** Assemble the protective plates.



2.2 ADBLUE/DEF EMITEC SYSTEM (CUMMINS ENGINE)

2.2.1 PREVIOUS STEPS

- a. Check the AdBlue/DEF fluid dosing system
- b. Turn off the ignition and disconnect the batteries
- c. Release the pressure from the AdBlue/DEF dosing system
- d. Remove the AdBlue/DEF injector

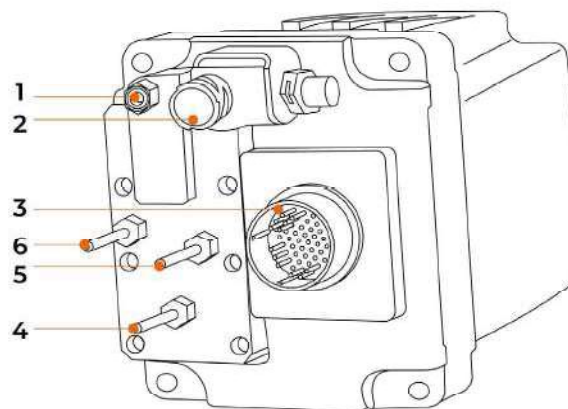
Note: place a suitable container at the end of the pipe



2.2.2 CLEANING OF THE ADBLUE/DEF OUTLET CIRCUIT

- a. Disconnect the AdBlue/DEF fluid return pipe (6)
- b. Disconnect the air supply line from the AdBlue/DEF dosing module (1)

1. Compressed air intake.
2. Electrical connector/Compressed air flow control valve.
3. Electrical connector / AdBlue/DEF pump heater.
4. AdBlue/DEF intake.
5. AdBlue/DEF and air exhaust/mixture.
6. AdBlue/DEF return.





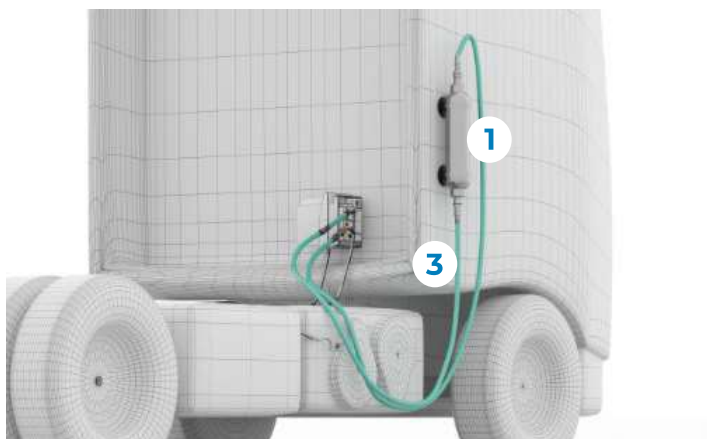
c. Connect the adapters “4” (4a or 4b as appropriate) and “5” in the compressed air intake of the AdBlue/DEF module (1) and in the compressed air exhaust of the vehicle. Next, join a hose (“1” y “3”) in each adapter but without connecting them to the tank “2a” yet.



d. Fill tank “2a” with 250ml of hot distilled water (MAX. 60°C/140°F) from the upper part, using the filling bottle “6”.



e. Connect the hoses “1” and “3” to tank “2a”





- f. Start the engine
- g. Perform the corresponding action as many times as necessary using the diagnostics tool until only compressed air is expelled through the injector nozzle. Use a container or measuring cylinder to collect 250ml of water approximately that will be expelled through the injector.

Actuate components >> “SOLENOID VALVE OF THE ADBLUE/DEF DOSING PUMP”

Note: in this case, the action indicated serves only to ensure the proper cleaning of the AdBlue/DEF circuit.

- h. Connect again all the elements previously disconnected.

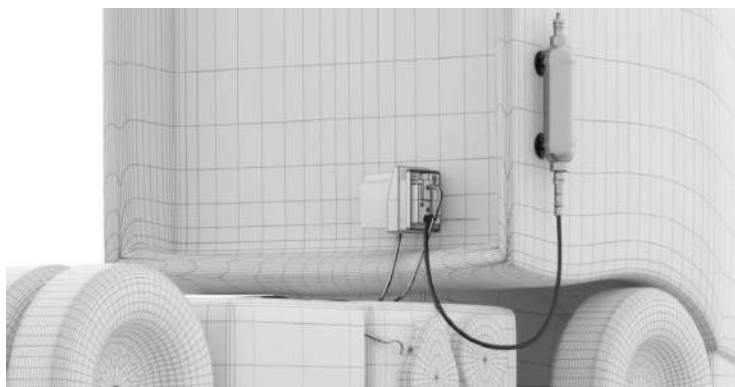
2.2.3 CLEANING FROM THE ADBLUE/DEF INLET CIRCUIT TO THE MODULE

- a. Disconnect the AdBlue/DEF supply pipe from the dosing module (4).
- b. Disconnect the AdBlue/DEF fluid return pipe (6).
- c. Place a container or tube in the nozzle (6) to collect the amount of return liquid.
- d. Connect hose “7” with quick coupling of 3/8” to the AdBlue/DEF intake connector (4).



- e. Connect the hose to tank “2a”.

Previously, the tank must be empty and without the hoses of the previous test.





f. Fill tank “2a” with 250ml of hot distilled water (MAX. 60°C/140°F) from the upper part.

g. Start the engine

h. Perform the corresponding action with the diagnostics tool and assess the result. Use a container or measuring cylinder to collect the water that will be dosed by the injector. If the water is not drained completely, repeat the action.

System checks >> “ADBLUE/DEF PUMP”

Note: in this case, the action indicated serves only to ensure the proper cleaning of the AdBlue/DEF circuit.

i. Connect again all the elements previously disconnected.

2.2.4 SUBSEQUENT STEPS

a. Check that there are no errors memorised in the Control Unit.

b. Disassemble the AdBlue/DEF module cleaning equipment and rinse all components with hot water, including the tank.

c. Assemble the AdBlue/DEF module connections and check the sealing of both the module and the connections.

2.3 ALBONAIR ADBLUE/DEF SYSTEM

2.3.1 PREVIOUS STEPS

a. Carry out the AdBlue/DEF circuit purge test with the diagnostics tool.

ACM system >> System checks >> “ADBLUE/DEF CIRCUIT PURGE”

b. Disassemble the protective plates.

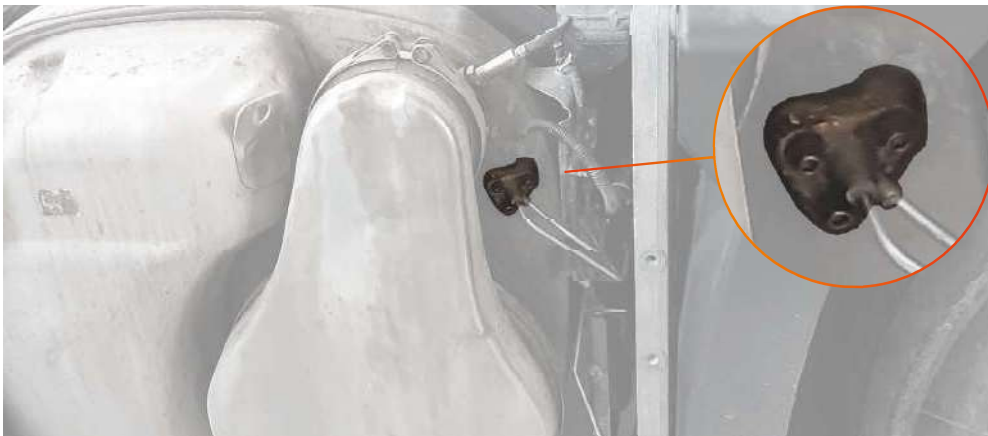




For greater comfort during the process, disassemble also the support of the side plate.



c. Disassemble the AdBlue/DEF injector fixing and remove the injector.



d. Place a container under the injector nozzle.



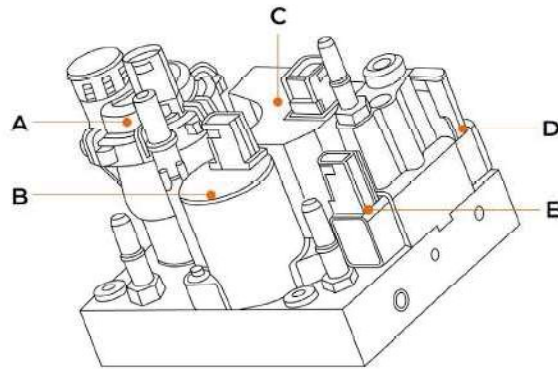


2.3.2 CLEANING OF THE ADBLUE/DEF CIRCUIT

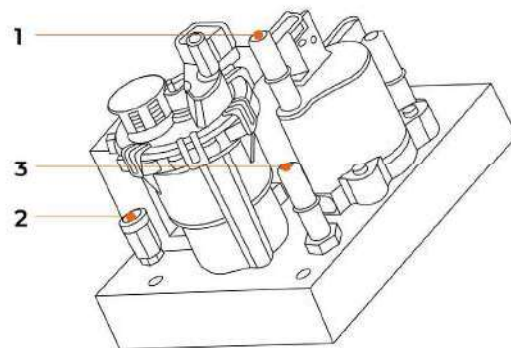
a. Disassemble the AdBlue/DEF intake connection to the module **(3)**.

Note: Clean the remaining AdBlue/DEF that might fall after the disconnection.

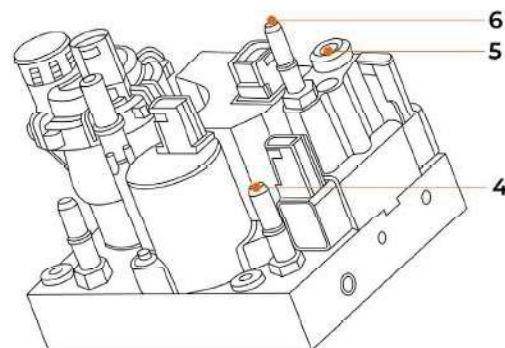
- A.** AdBlue/DEF pump.
- B.** Heating valve of the AdBlue/DEF tank.
- C.** AdBlue/DEF temperature sensor / Air control valve.
- D.** Air pressure sensor.
- E.** AdBlue/DEF pressure sensor.



- 1.** Coolant intake.
- 2.** Compressed air intake.
- 3.** AdBlue/DEF intake.



- 4.** Coolant outlet.
- 5.** Air outlet.
- 6.** AdBlue/DEF outlet.





- b.** Connect hose “7” with quick coupling of 3/8” to the AdBlue/DEF intake connector (3).



- c.** Connect the other end of hose “7” to the quick connector at the bottom of tank “2”.



- d.** Fill tank “2” with approximately 200ml of hot distilled water (MAX. 60°C/140°F) from the upper part, using filling bottle “6”.





- e. Perform the cleaning check of the AdBlue/DEF module with the diagnostics tool.

ACM system >> System checks >> “ADBLUE/DEF MODULE CLEANING”

Note: In order to ensure that the AdBlue/DEF circuit is not clogged and the system is operating correctly, the water volume dosed must be between the maximum and minimum values shown at the end of the action.

2.3.3 SUBSEQUENT STEPS

- a. Check that there are no errors memorised in the Control Unit.
- b. Disconnect the diagnostics tool and turn off the vehicle ignition.
- c. Disassemble the AdBlue/DEF module cleaning equipment and rinse all components including the tank with hot water.
- d. Assemble the AdBlue/DEF module connection and check the sealing of both the module and the connections.
- e. Assemble the AdBlue/DEF injector.
- f. Assemble the protective plates.

2.4 BOSCH DENOXTRONIC 2.2 AND DENOXTRONIC 6-HD ADBLUE/DEF SYSTEM

2.4.1 PREVIOUS STEPS

- a. Perform the AdBlue/DEF circuit purge.

Note: Turn off the ignition and wait 2 minutes before turning it on again.





b. Locate the AdBlue/DEF dosing module.

Note: The location depends on the vehicle.

c. Disassemble the protective plates if needed.

d. Disassemble the AdBlue/DEF injector fixing and remove the injector.

Note: The location depends on the vehicle.



e. Place a container under the injector nozzle.

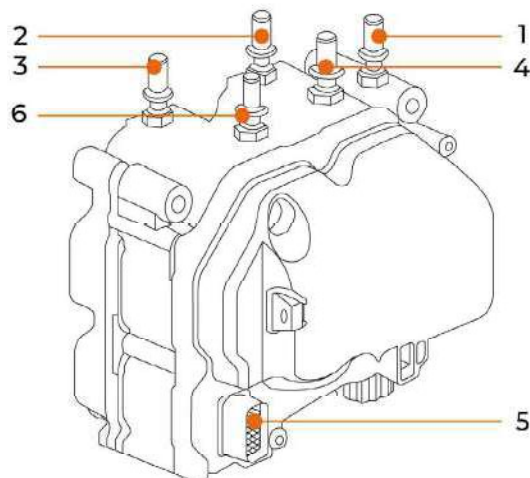
2.4.2 ADBLUE/DEF CIRCUIT CLEANING

a. Disconnect the AdBlue/DEF supply pipe from the dosing module **(6)**.

Note: Clean the remaining AdBlue/DEF that might fall during the disconnection.

b. Disconnect the AdBlue/DEF fluid return pipe to the tank **(4)**.

- 1.** AdBlue/DEF outlet.
- 2.** Coolant outlet.
- 3.** Coolant intake.
- 4.** AdBlue/DEF return.
- 5.** Electrical connector.
- 6.** AdBlue/DEF intake.





c. Connect hose “7” with quick coupling of 3/8” to the AdBlue/DEF intake connector (6).

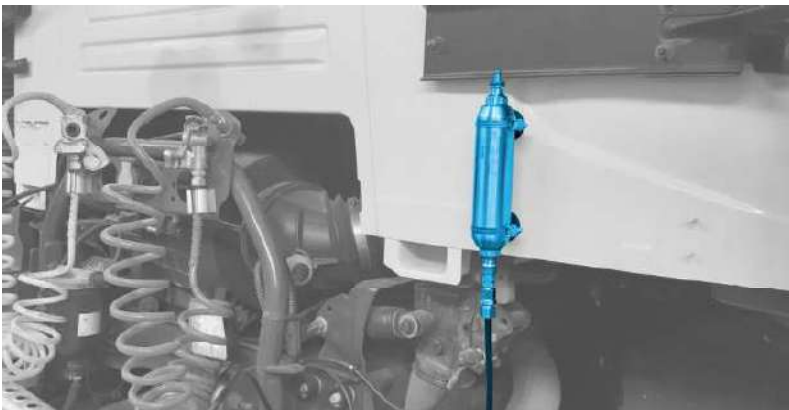
d. Connect the adapter “8” to the AdBlue/DEF return connector (4) and place a container at the free end.

Note: During the test, and depending on the vehicle, the amount of return water might be up to 700ml approximately.



e. Connect the other end of hose “7” to the quick connector at the bottom of tank “2b”.

Note: Place the tank at a height above the inlet port of the AdBlue/DEF dosing module.



f. Fill tank “2b” with hot distilled water (60°C/140°F MAX.) from the upper part, using the filling bottle “6”.





- g.** Perform the action for the AdBlue/DEF module cleaning with the diagnostics tool.

Maintenance >> “ADBLUE/DEF MODULE CLEANING”

Note: In order to ensure that the AdBlue/DEF circuit is not clogged and the system is operating correctly, the water volume dosed must be between the maximum and minimum values shown at the end of the action.

2.4.3 SUBSEQUENT STEPS

- a.** Check that there are no errors memorised in the control unit.
- b.** Disconnect hose “7” from the bottom of tank “2b”.
- c.** Disconnect the diagnostics tool and turn off the vehicle ignition.

Important: The system must automatically eject the remaining water from the pipes before continuing with the next step.

- d.** Disassemble the AdBlue/DEF module cleaning equipment and rinse all components including the tank with hot water.
- e.** Assemble all the components disassembled in previous steps.

Note: Finally, it is advisable to perform the AdBlue/DEF dosing check to verify that all values are correct and that, after re-connecting the pipes, the behaviour of the system is correct.

2.5 CUMMINS ECOFIT UL2 ADBLUE/DEF SYSTEM

2.5.1 PREVIOUS STEPS

- a.** Locate the AdBlue/DEF dosing module.

- 1.** Electrical connection.
- 2.** AdBlue/DEF inlet from the tank.
- 3.** AdBlue/DEF outlet to the injector.





- b.** Locate the gauger of the AdBlue/DEF tank and the outlet and return pipes.



- c.** Locate the AdBlue/DEF injector and disassemble the fixing to place a container in the nozzle.

Note: The location of each one of the components depends on the vehicle. Disassemble the protective plates if necessary.

- 1.** AdBlue/DEF inlet.
- 2.** AdBlue/DEF return.
- 3.** AdBlue/DEF injector.



2.5.2 ADBLUE/DEF CIRCUIT CLEANING

Note: The steps described below might be different in vehicles where the hydraulic connections and the component locations differ.

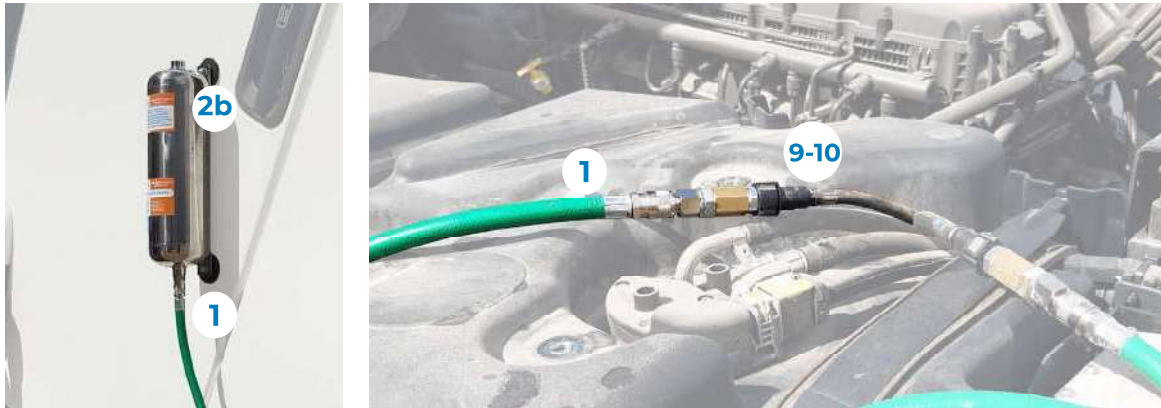
- a.** Disconnect the pipe that connects the AdBlue/DEF pump to the gauger.

Note: Clean the remaining AdBlue/DEF that might fall during the disconnection.





b. Connect adapter “9” or “10” and hose “1” to the pipe connection that goes to the AdBlue/DEF pump. Additionally, connect the free end of hose “1” to the lower part of the 1.5L tank “2b”.



c. Fill tank “2b” with hot distilled water (60°C/140°F MAX.) from the upper part, using the filling bottle “6”.



d. Disconnect the AdBlue/DEF return pipe from the gauger.

Note: Clean the remaining AdBlue/DEF that might fall during the disconnection.





e. Connect adapter “9” or “10” and hose “3” in the return pipe connection to the gauger. Additionally, insert the free end of the hose “3” into a container.

Note: During the test, the amount of return water will be between 700 and 900ml.



f. Perform the action for the AdBlue/DEF module cleaning with the diagnostics tool.

Maintenance >> “ADBLUE/DEF MODULE CLEANING”

Note: In order to ensure that the AdBlue/DEF circuit is not clogged and the system is operating correctly, the amount of water dosed must be between the maximum and minimum values shown at the end of the action.

2.5.3 SUBSEQUENT STEPS

- a. Check that there are no errors memorised in the control unit.
- b. Disconnect hose “1” from the bottom of tank “2b”.
- c. Disconnect the diagnostics tool and turn off the vehicle ignition..
- d. Disassemble the AdBlue/DEF module cleaning equipment and rinse all components including the tank with hot water.
- e. Assemble all the components disassembled in previous steps..

Note: Finally, it is advisable to perform the AdBlue/DEF dosing check to verify that all values are correct and that, after re-connecting the pipes, the behaviour of the system is correct.