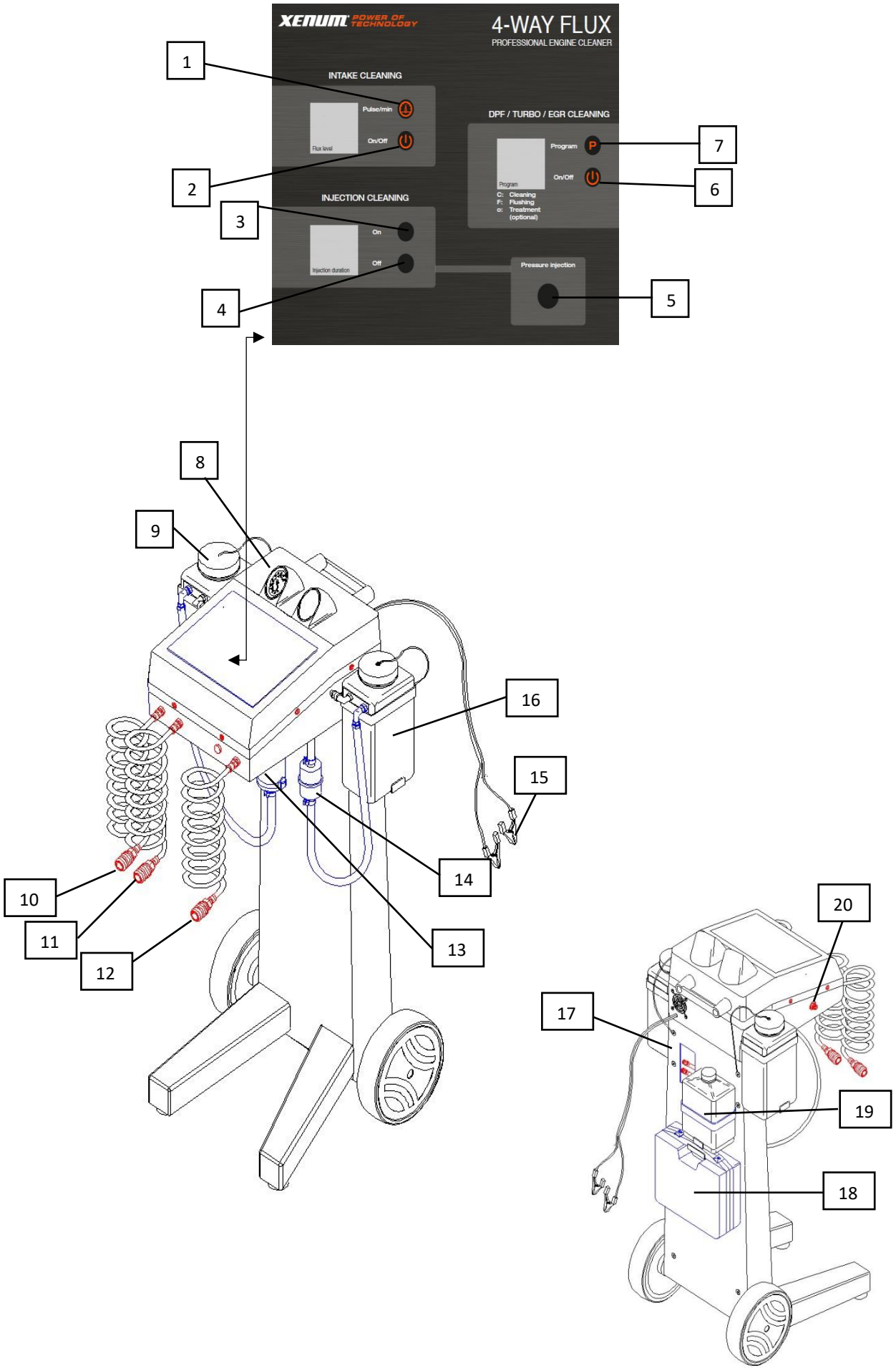
XENUM POWER OF TECHNOLOGY
4-WAY FLUX
PROFESSIONAL ENGINE CLEANER
INTAKE CLEANING
Pulse/min
On/Off
Flux level
DPF / TURBO / EGR CLEANING
Program
On/Off
C: Cleaning
F: Flushing
o: Treatment (optional)
INJECTION CLEANING
On
Off
Injection duration
Pressure injection
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

Characteristics

Technical Details

Model:	4-WAY FLUX
Supply:	12 Volt
Power:	0,192 kW
Dimensions:	460 x 420 x 1045 mm
Mass:	36 Kg.

- Practical and functional design.
- Adjustable injection flow pump (Petrol-Diesel).
- DPF pump
- 36 adapters for connection to fuel injection systems.
- 4 adapters for connection with DPF
- 2 adapters for connection to air intake system.
- 12V electrical connection to the vehicle.
- Injection pressure gauge to control pressure (from 0 to 7bar) with anti-shacking system
- Injection pressure regulator.
- Injection automatic blocking system: When pressure is not enough or there is not enough flow.
- 2 litre tanks for injection & DPF
- 1.5 litre tank for air intake
- Protection system for equipment and vehicle against wrong polarity connection.
- 100 dBA buzzers.
- Alarms for: end of cycle, insufficient pressure and filter blocking.
- Easy-to-use electronic control boards.
- Automatic injection connectors with retention
- Storage briefcase for connectors.

Applications

Intake Cleaning: Professional unit for cleaning the entire Intake system of diesel as well as petrol engines intensively, including the intake manifold, EGR valve and swirl valves.

Fuel System Cleaning: Professional equipment for cleaning the Fuel system of petrol and diesel engines. It cleans the injectors, the intake valves and the combustion chambers.

DPF cleaning: Professional machine for cleaning the entire exhaust system.

Recommended frequency of use:

Intake Cleaning: every 60.000 km or once every 2 years

Fuel System Cleaning: every 30.000 km or every year

DPF cleaning: every 30.000 km or every year

Depending on the car use this frequency can be shorter.

Results:

To keep your vehicle as eco-friendly as possible.
Lower the mechanical defects. No more failing injectors, clogged EGR, Turbo or DPF.
Keep the fuel consumption as low as possible.

INTAKE CLEANING

1. PREPARATION OF THE 4-WAY FLUX

Open the filler cap (19) and add 1L of XENUM I-FLUX FLUID (ref: 6124001) into the reservoir for 4 cylinder and 1,5L for larger engines.Only XENUM I-FLUX FLUID will provide optimum result. Usage of other chemicals may cause damage and will not clean the intake system properly.

2. PREPARATION OF THE CAR

- Scan the engine for trouble codes.
- Check the oil level of the engine oil.
- Check the cooling system and liquid level.
- Add 1 can of XENUM Ultimax Diesel Conditioner to the fuel reservoir (REF: 3222350) For cars equipped with Diesel Particle Filter we recommend XENUM Full Detox Diesel or In&Out Cleaner (REF: 3192015) in severe cases. ATTENTION: In case that In&Out Cleaner is applied, it's instructions should be followed only AFTER the treatment.
- Disconnect the air hose between intercooler and the inlet manifold (on atmospheric engine the hose between air box and inlet manifold).
- Disconnect the EGR valve to prevent it to open during the cleaning process. => Check if the EGR valve is closed.
- Switch off all power-consuming accessories such as air conditioning, heated seats etc.
- Start the engine and accelerate a few times. Make sure that after acceleration it immediately returns to idle.

3. CLEANING OPERATION

- Connect the 4-WAY FLUX power cable to the car's battery.
- Start the engine.
- Choose the right size of plate and position the venturi against the inlet manifold. The vacuum will keep it in place.
- Adjust the venturi precisely: open the choke screw. Then gradually reduce the airflow: close the choke screw by turning it clockwise until the engine idle drops. Then reopen it slightly by turning it 90° counter clockwise. Lock the choke screw with the lock nut.
- Turn the power switch on (2).
- Set the Pulse/min selector (1) on level 30 to start with.
- The potentiometer must be adjusted in order to have a smooth idle run of the engine; speed could be slightly increased during the treatment. If engine knocking is noticed, the FLUX should be decreased until the engine runs smoothly. Higher FLUX rates will shorten the treatment time; lower rates will improve the result.
- If no fluid comes out of the 4-WAY FLUX, check if the engine is producing enough vacuum. Also check the 4-WAY FLUX tubes for damage or leaks witch can cause vacuum losses. The supply of the chemical for the treatment depends entirely on the vacuum.
- Leave the engine to run at idle for 1 to 2 hours (for different engines) until the fluid is consumed entirely.
- If the inlet manifold is equipped with a butterfly valve, turn the venturi on 180° open each 20 min.
- When the fluid is consumed, leave the engine running on idle for 15 min. without removing the venturi, opening the choke screw to maximum airflow. This operation is to help eliminating cleaning fluid inside the inlet manifold. (make sure there is no fluid left after the treatment).
- Switch off the 4-WAY FLUX power. Remove the venturi, stop the engine and disconnect the 4-WAY FLUX from the car battery.
- See 5.3 of this manual before next step.
- Reconnect the EGR valve and replace the air hose to the inlet manifold.
- Start the engine; let it run on idle for minimum 5min.
- Scan the engine for trouble codes and delete possible error codes if necessary.
- Take the car for a test-drive. Heavy smoke from the exhaust can be observed for some time due to the cleaning process that is still active in the exhaust system of the engine.
- ATTENTION: Before testing the vehicle make sure there is no trace of I-FLUX cleaning fluid left inside the intake system.

4. SERVICING THE 4-WAY FLUX

The 4-WAY FLUX has been designed for minimum maintenance and maximum reliability. But we recommend following these simple instructions:

- Make sure that after the cleaning operation all the I-FLUX FLUID has been removed from the tank and hoses.
- After operation, clean the venturi with a degreaser.
- Keep stored in a dry and dust free environment.

5. WARNING

5.1 IMPORTANT: 4-WAY FLUX system is designed for cleaning the air intake system by vaporising the chemicals through the venturi directly at the in- take collector's inlet. It is not permissible for use in any kind of operations through the turbocharger or intercooler.

5.2 IMPORTANT: I-FLUX fluid is flammable. Avoid leaking during the treatment on hot parts of the engine. Make sure the device is positioned stable and the venturi/restrictor will not come off the inlet manifold during the treatment. Keep every part of the 4-WAY FLUX at a safe distance from the hot parts of the engine, such as exhausts, turbo, catalyser or DPF. Never leave the car unattended.

5.3 IMPORTANT: In some cases there might be oil leaking from the turbo compressor's seal.

During the treatment, leaked oil might have accumulated in the disconnected intake hose. Make sure there is no remaining oil in the intake system before assembling the hoses. Remaining oil residues could cause uncontrolled revving of the engine and result in severe damage.

Remove it by revving the engine while keeping a cloth in front of the connecting hose before reconnecting it to the intake collector. We strongly recommend replacing the leaking seal since it could (partly) be responsible for deposits in the intake system and cause engine malfunctioning or damage.

5.4 IMPORTANT: Never run the engine without the venturi while there is still cleaning solvent in the collector. Remaining solvent could cause uncontrolled revving of the engine and result in severe damage. If doubts exist, use an endoscope to inspect the collector. If any doubt persists, contact the Xenum technical department.

5.5 IMPORTANT: If any unusual noises (detonations) from the engine are observed during the I-FLUX treatment, immediately stop the treatment by shutting down the power of the 4-WAY FLUX. Let the engine turn a while with the venturi still connected to the engine. If the detonations are gone restart the 4-WAY FLUX, start to continue on lower FLUX level.

5.6 IMPORTANT: If for some reason the treatment has to be interrupted while in process, for example when the base idle of the engine start to increase during the treatment, immediately stop the treatment and proceed as follows:

- Shut down the power of the 4-WAY FLUX.
- Try to drop down manually the base idle of the engine by closing the choke screw from the venturi by turning it clockwise until the engine idle drops.
- Wait a few minutes to check if the base idle of the engine stays normal.
- Restart the I-FLUX, continue on lower FLUX level by adjusting the potentiometer.

XENUM cannot be held responsible for damage due inappropriate use of the 4-WAY FLUX system. Warning directives should be strictly followed.

INJECTION CLEANING

I. Connection:

1. Connect the black cable clamp (identifiable with the - sign) to the negative pole of the vehicle battery and the red cable clamp (identifiable with the + sign) to the positive pole of the battery.
2. Check the connections.
   a) If the connection is correct, the display will light up. The equipment is now ready to work.
   b) If the connection is incorrect (bad contact or polarity) the equipment will not give any signal. In this case we shall verify the electrical connections and go back to section 1.

II. Fluid circuit connection

Check that the valve (20) is open to the maximum (turn it counterclockwise). This valve is only used with petrol engines when it is not possible to increase the circuit pressure with the regulator (5)

1. Disconnect the fuel return tube from the vehicle engine.
2. Connect the return hose (10) using the corresponding adapters.
3. Disconnect the fuel conduction tube from the engine.
4. Connect the pressure hose, Pressure (11), to the fuel entrance of the vehicle's engine using the appropriate adapters.
5. Add the appropriate amount of X/Flush diesel or X/Flush Petrol to the tank.

NOTE: The fuel pump fuse must be disconnected from the vehicle's tank. If this is not possible, use the by-pass connector and the appropriate adapters to assemble a bridge between the fuel arrival tube and the return tube to the tank. Open the vehicle's tank cap in order to avoid pressure build-up.

III. Preparation for Starting Up

Warning

Before adjusting the pressure in the system, it is recommended to check the appropriate fuel pressure supply for the engine in the technical book supplied by the vehicle manufacturer.

ILLUSTRATIVE FIGURES FOR WORKING PRESSURE IN THE SYSTEMS

- Carburetor: 0.6 bars
- Single point: 1-1.5 bars
- Multi-point (electronic): 2.5-3 bars
- Multi-point (mechanical): 5.5-6 bars
- Non-electronic diesel systems: 1.0 bars
- Electronic diesel systems (TDI): 1.1 bars approx.
- High pressure systems (Common Rail) 2.5 bars approx.
- Diesel: from 3500 cc increase pressure to 1.5 bars

ENGINE RPM DURING CLEANING PROCESS

- Catalysed petrol 1500-1800 rpm max.
- Non-electronic diesel 1500-1800 rpm±.
- Electronic diesel (TDI). Idle

IV. Air Bleeding

This operation is necessary to take out the air in the fluid circuit and to adjust the appropriate working pressure for each engine.

1. Check that the regulator (5) is fully open (counterclockwise).
2. Press the ON button (3) for 15 seconds approximately. If, after this time, no liquid passes through the return tube to the tank, we shall check the hose connections.
3. If during the purging the fluid flow through the return tube to the tank is regular and uniform, we shall adjust the working pressure by turning the pressure valve clockwise (5) until the working pressure recommended by the vehicle manufacturer is reached. Press OFF (4).
4. Check that all the connections are correct and that there are no leaks in any part of the system.

V. Cycle

1. Once all the fluid system connections have been checked, press ON (3) until the pressure gauge (8) recovers the operating pressure previously adjusted in the Bleeding.
2. Release the ON button (3) and the equipment remains operational, with the display on.
3. Start up the vehicle's engine and observe if the fuel moves through the return tube to the tank. Readjust the pressure if necessary.

End of Cycle

The cycle will continue until all the liquid in the machine's tank has been consumed or until the end of the cycle (45 minutes). In this case the equipment will stop, and an alarm will go off. At the same time the vehicle's engine will stop because of the fuel supply being cut off.

- Disconnect the vehicle's ignition.
- Press OFF (4).

ATTENTION - Diesel engines may speed up if they take air in from the machine's tank.

VII. Disconnection

1. Turn the regulator (5) counter clockwise to the maximum
2. Press ON (3).
3. Check that the pressure gauge is at zero.
4. Disconnect the 4-WAY FLUX equipment from the battery.
5. Disconnect the fuel pressure and return hoses. Connect the vehicle tubes in the right place.

IMPORTANT: Once the engine has been cleaned, we recommend circulating with the engine at full rpm for at least the first 5 minutes. If this is not possible, do some separate accelerations to empty any remaining liquid.

VIII. Voluntarily Stopping the Process

1. Stop the vehicle.
2. Press OFF (4).
3. Follow the Disconnection section instructions.

IX. Fluid purging

The fluid must be drained from the machine system as follows, to prevent fuels from mixing:

1. Fit a connector tube to hose (10) and another to hose (11), placing them in a tank. Check that the pressure regulator (5) is completely open (counter-clockwise).
2. Press ON (3) and hold down until fluid comes out of the hoses (10 and 11).
3. Turn on the pressure regulator (5) to the maximum (clockwise). Wait until no liquid comes out through the hoses. Release the ON button (3) and turn on the pressure regulator (5) counter-clockwise.
4. Disconnect the connector tubes from the hoses (10 and 11).

X. Possible Anomalies

ANOMALY	POSSIBLE CAUSE	SOLUTION
The equipment does not start when pressing ON.	Lack of electrical power.	Check the battery connection. Check the state of the battery. Check the fuse.
No liquid circulates through the return conduct.	Dirty filter.	Check the filter.
	Lack of voltage.	Check the state of the battery.
	Broken gauge.	Contact the technical engineers.

The gauges do not return to their initial position when the cycle is finished.	The circuit maintains the pressure due to fluid remaining in it.	Carry out a voluntary disconnection. Check the tank is empty. Call the technical engineers.
There are fuel leaks in the circuit.	There is a leak in one of the components.	Press OFF and disconnect the battery. Check there is no leakage through the joints. Contact the technical engineers.

XI. Maintenance

- Filter: It is recommended to change the filter every 12 months or 50 operations.
- Only specialized staff authorized by the distributor should handle or disassembly the equipment.
- Never handle the machine while it is connected to the vehicle's fuel system.

Warnings

Precautions for use

- Connect only to 12 Vcc.
- Never handle the inside of the equipment.
- Depressurise the fluid system before disconnecting or handling equipment connections (see section VII. Disconnection).
- Never allow the hoses and connections to be in contact with the hot areas of the engine (Hoses maximum heat
- resistance 120 ºC).
- Take precautions so the electrical connection cables do not become deteriorated because an excess of temperature or mechanical brush.
- Check all the connections before starting the engine up and check for any possible fluid leaks once the system is pressurized.
- If you observe an overheating of the vehicle's engine, stop the engine and depressurize the system. Press OFF and wait at least 15 minutes before handling the hoses.
- Never start the machine up if inflammable liquid has been spilt in it. Dry and clean the machine and wait for a prudential period.
- Do not allow the machine to be near any source of heat or flammable material.
- Do not smoke during the operation.
- Place the equipment on a flat and stable surface.
- Do not submit the machine to a drastic force nor place any weight on it.
- Always close the tank cap to avoid impurities from falling in.
- When the 4-WAY FLUX is not going to be used during a long period of time, we recommend connecting it to a battery and do the purging function without liquid. This is important to avoid problems with the pump.
- Use for the individual protection: Protection glasses & gloves.

DPF CLEANING

This operation must be performed in the open air. Place a collection container at the exhaust outlet.

1. PREPARATION OF THE CAR

- Check and adjust the oil level and coolant level of the engine.
- Switch off all power-consuming accessories such as air conditioning, heated seats etc.
- Make sure the engine has reached operation temperature.

Optionally but recommended:

The result of the treatment can be improved by using additional XENUM additives to the fuel tank:

a) Complex Diesel System cleaner (REF: 3031301) will clean the injection system to slow down clogging up of the DPF after the treatment.

b) Ultimax Diesel (REF: 3222300) will have similar action but will also help regenerate the particle filter.

c) Full Detox Diesel (REF: 3468350) will have an even better result in cleaning the injection system and boost regeneration of the particle filter.

d) In & Diesel (REF: 3192015) will have the best result in cleaning the injection system and boost regeneration of the particle filter.

Please note that In & Out Diesel is intended to clean the DPF without additional actions such as the DPF Flush. In extreme situations however, using both products jointly will result in the best possible result. In this case, the instructions of using In & Out Cleaner are overruled by the DPF Flush instructions.

2. INSTALLATION

- Perform a reading of the error codes with the help of a diagnostic tool and make sure that no faults are present (other than saturation of the DPF). These may interfere with the smooth running of the DPF cleaning. Any other faults must be repaired before a satisfactory DPF cleaning can be performed.
- Connect the equipment electric clamps to the battery of the vehicle
- Locate the differential pressure sensor in the engine compartment and disconnect the two hoses. If the sensor is not accessible, locate the connection tubes directly on the DPF and disconnect them. If this is not possible, you can do the connection to the lambda sensor.
- Connect the appropriate adapter to the vechicle
- Connect the adapter to the equipment DPF spiral hose (12). Make sure that the hoses don't touch the exhaust pipe.

3. CLEANING

- Pour the cleaning product DPF Flush Step 1 (500 ml) into the 4-WAY FLUX D.P.F. tank.
- Start the vehicle's engine and let it idle
- Press the ON/OFF button (6)
- Press the Program button (7) once. "C" (cleaning) will appear. The cleaning sequence will be launched automatically.
- At the end of the sequence a signal sounds (beep).
- Raise the car engine to 3.000rpm and live it for 5 minutes.

4. RINSING

- Slow down the engine to 2.000rpm aprox.
- Introduce the rinsing product DPF FLUSH Step 2 into the 4-WAY FLUX DPF tank.
- Press the Progam button (7) twice. "F" (flushing) will appear on screen. The rinsing sequence will be launched automatically.
- At the end of the sequence a signal sounds (beep).
- Stop the vehicle's engine.
- Disconnect the adapter from the vehicle

- Blow air through the 2 differential pressure sensor hoses (this will avoid damaging the sensor).
- Reconnect the sensor
- Delete any possible error codes.

5. DRIVING CYCLE

Drive the car for around 20 minutes to initiate a regeneration cycle. In order to initiate the regeneration cycle, drive at a consistent speed at a medium to high RPM (>2.500). It's possible some heavy smoke to appear for a while from the exhaust, due to the cleaning process still active in the DPF. This results in effective cleaning of the DPF.

If it is not possible to do a driving cycle, you can perform a static regeneration.

6. COATING (OPTIONAL)

- Connect the equipment electric clamps to the battery of the vehicle
- Connect the appropriate adapter to the vechicle
- Connect the adapter to the equipment DPF spiral hose (12).
- Introduce the DPF STEP 3 into the 4-WAY FLUX DPF tank.
- Start the vehicle's engine and let it idle
- Press the Progam button (7) three times. "o" (optional treatment) will appear on screen. The treatment sequence will be launched automatically.
- At the end of the sequence a signal sounds.
- Stop the vehicle's engine.
- Disconnect the adapter from the vehicle
- Blow air through the 2 differential pressure sensor hoses (this will avoid damaging the sensor).
- Reconnect the sensor
- Delete any possible error codes.