



- Cleaning LPG/CNG injectors and fuel systems effectively
- Cleaning of the DI injectors and prevent DI engine pollution
- Prevents high repair costs
- High success rate
- Does not harm the gas injector seats
- Quick and easy servicing procedure
- Tested and approved for all Prins light-duty applications

InjectorCare by Prins Autogassystemen is a cleaning fluid specially developed for cleaning gas injectors, and DI injectors. To keep the Prins LPG/CNG system and the original fuel system in optimum condition and to ensure a long service lifespan Prins recommends to use this product. InjectorCare easily removes heavy-ends and oil residue that may be left behind in the original fuel system and LPG/CNG system over time. Most of the times this is caused by a poor fuel quality. The heavy ingredients in fuels form a sludge/syrup-like substance which makes LPG/CNG injectors and other engine parts no longer function properly (e.g. sticking injector) or even fail. The preventive cleaning with InjectorCare can be combined with the normal service interval of the Prins LPG/CNG system. Prins recommends preventive cleaning of the LPG/CNG injectors during each service interval (<75,000 km) following the below mentioned cleaning procedure. InjectorCare has been extensively tested to be safe as the only cleaning product for Prins injectors. Other cleaning fluids can potentially damage the seals in these injectors.

When and how to use InjectorCare?

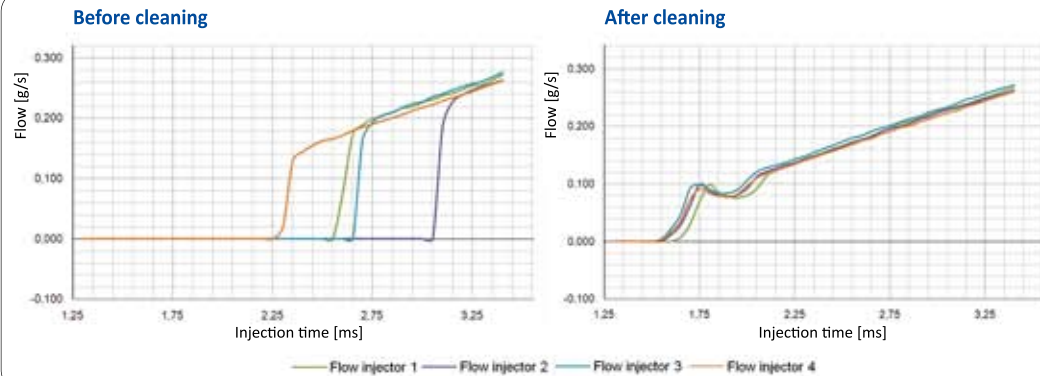
Case 1: InjectorCare - for cleaning LPG/CNG injectors

How do you recognize contaminated LPG/CNG injectors?

The injectors may become extremely polluted over time. Therefore the injector opens and/or closes delayed so that the fuel mixture is disturbed. This effect can get worse under cold conditions.

Symptoms are:

- Bad switch over behaviour, especially during cold conditions
- Bad idling behaviour of the engine or even stalling of the engine when switching from Petrol to LPG/CNG.
- Fuel trims on LPG/CNG disturbed, especially at low load.
- Misfiring



Cleaning instruction for injectors in Prins VSI-2.0 LPG/CNG system:

1. Select Petrol and let the engine warm up [Petrol fuel status]! - Then turn off the engine.
2. Loosen the hose (s), between filter unit and rail, on the filter side. - Fill the cap of the bottle with InjectorCare (= 20ml).
3. Pour with the aid of a funnel, the InjectorCare fluid into the gas pipe towards the injector rail.
 - Use per injector 5ml InjectorCare (e.g. use 20ml for a 4 injector rail).
 - Make sure that the fluid can only enter the rail and not the filter unit.
4. Reconnect the hose (s) to the filter unit and secure it with a hose clamp.
5. Start the engine on Petrol.
6. Select in the Prins AFC software under "Diagnostics" the tab "actuator test".
7. Use the actuator test for Switching off Petrol injector 1 and then Switch on gas injector 1. [gas injector will be activated for 5 seconds].
8. Repeat this for all cylinders in ascending order until all the liquid is consumed.
9. Repeat for best results two times.
 - If the results are insufficient, check for other malfunctions. The rail can be offered to Prins for additional check-up/cleaning.

Cleaning instruction for injectors in Prins VSI-I LPG/CNG system:

1. Select Petrol mode and allow the engine to warm up [Petrol fuel status]! - Then turn off the engine.
2. Loosen the hose (s), between filter unit and rail, on the filter side. - Fill the cap of the bottle with InjectorCare (= 20ml).
3. Pour with the aid of a funnel, the InjectorCare fluid into the gas pipe towards the injector rail.
 - Use per injector 5ml InjectorCare (e.g. use 20ml for a 4 injector rail).
 - Make sure that the fluid can only enter the rail and not the filter unit.
4. Reconnect the hose (s) to the filter unit and secure it with a hose clamp.
5. Start the engine on Petrol.
6. Let the engine run at 2000-3000 rpm and switch to LPG/CNG status.
 - Let the engine run just until all the liquid is consumed. (Fuel trims are stabilized again)
7. Repeat this procedure two times for the best result.
 - If the results are insufficient, check for other malfunctions. The rail can be offered to Prins for additional check-up/cleaning.

Case 2: InjectorCare - for "preventive" cleaning the DI injectors/engine.

Modern direct injection engines are designed for their high performance combined with low fuel consumption and low exhaust emissions. In order to achieve this, the fuel is injected directly into the cylinder, and there are various intelligent subsystems running. Besides the many advantages of this technique, the risk of engine pollution increases and the self-cleaning function is critical.

Parts such as the original fuel injectors/pistons and intake manifold may over time become contaminated by combustion and oil residues. The contamination is less when using a cleaner fuel like LPG or CNG, but there may still be carbon deposits. The degree of contamination depends on many factors such as the structure of the engine, the use of the engine, the technical condition of the engine and maintenance.

A well-functioning gas system benefits from a fully functioning fuel system. Contamination of the fuel system can go unnoticed and proceed slowly but accelerates as the engine becomes older. It is important to undertake preventive cleaning so that the fouling process can be halted or reversed. InjectorCare is the right product to slow or reverse this process. Next to this preventive cleaning it is important to notice other pollution coming through the inlet channel and the cylinder in time and undertake possibly a more extensive cleaning. Through timely preventive or active cleaning most costly repairs can be avoided.

How do you recognize polluted (DI) engines?

- Loss of engine power
- Increased fuel usage
- Higher exhaust emissions
- Starting problems
- Fuel mixture too poor (Positive fuel trims)
- Misfiring on Petrol and gas



Polluted DI Engine

Cleaning instruction for DI fuel systems/engines:

- Add one bottle InjectorCare [325 ml] to +/- 50 litres of Petrol in the petrol tank, preferably before re-fuelling the petrol tank.
- Repeat the treatment every 10,000km (approximately every time before re-fuelling the petrol tank).

Injector nozzle before cleaning



Injector nozzle after cleaning

