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Electronic Fuel Injection in Classic Cars

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Pictures by author

When we were working on “curing” subsequent classic cars through conversion of original but troublesome and not really well functioning fuel systems to modern electronic NotroniG, a true beast, but a rare treasure at the same time, happened by our shop, engine M100 V8, 6,3l capacity.

Our customer’s suggestions to take a look at the M100 engine and potential solutions to its fuel supply issues made us design and build the entire complete fuel-air-ignition system.

Costs of reconditioning of original fuel supply system while rebuilding an M100 are very high. Exchange of 8 injectors and refurbishment of 8-section mechanical injection pump may cost as much as EUR 25 000.

The design of the engine significantly limited our options while working on its new fuel supply system. Selection of assemblies, parts, fabricating adapters for injectors so that all conditions related to flawless and safe engine performance were met seemed to have been impossible at the beginning of the project. But we took the challenge.

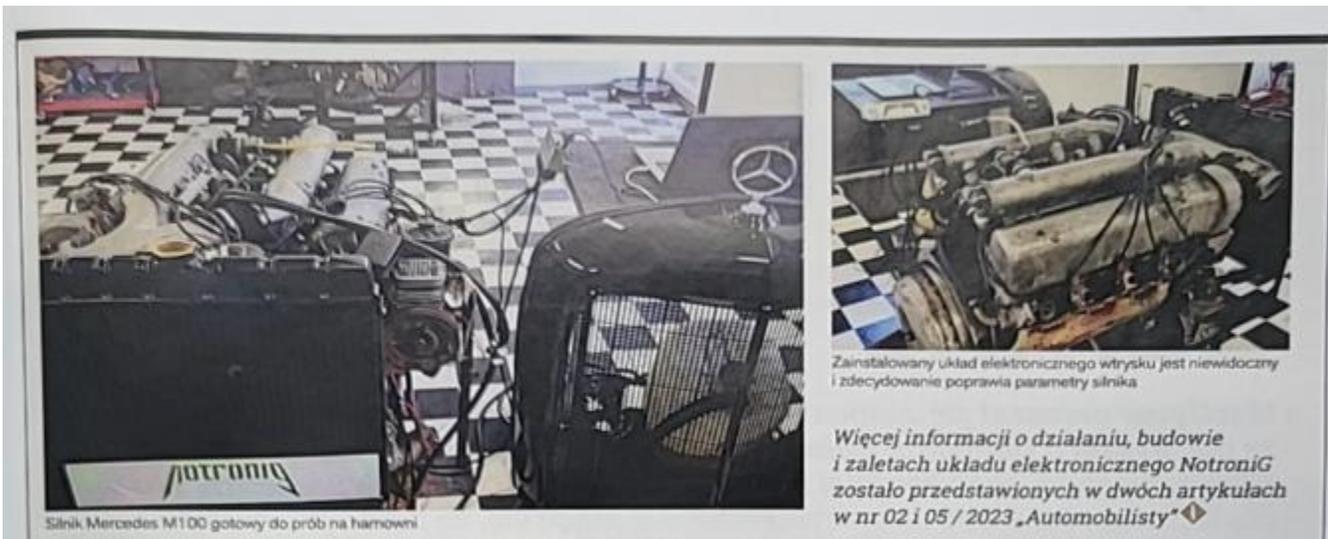
The biggest issue was sticking to our key commitments: we do not break anything, everything is possible to be reversed so that we can come back to original as for looks and aesthetics of the system and, most importantly, we improve the engine performance.

Thanks to support of a specialist from one of the world leading injectors manufacturer we managed to select a perfect modern equivalent injector that met our objectives, such as:

- Dimensions
- Working pressure
- Resistance
- N-heptan (g/min) factor
- Spray angle

By adjusting previously designed electric, mechanical and air supply systems, we achieved assumed parameters:

- Quality/smoothness of engine work
- Higher power and torque
- Better fuel economy
- Much lower costs



M100 ready for dyno trials

Installed electronic injection is practically invisible and it improves engine parameters.

More information about operation, design and advantages of NotroniG systems in two articles in Automobilista 02 and 05/2023.

NotroniG Fuel Systems Conversion

Key expertise of NotroniG lays within conversions:

- From Bosch MFI (W111, W113, W112, W108, W109, engines M127, M129, M130, M189)
- From K-Jet, KE-Jet (W107, W123, W124, W126, W129, W118, engines M110, M117, M116, M102, M103, M104, Audi)
- From D-Jet (W107, W114, W116, engines M116, M117, M180, M110, BMW E9, m30, Volvo P1800)
- From Kugel-Fisher (Peugeot, BMW)
- From carburetor systems (190SL, M180)



Rote Sau AMG was equipped with modified M100 engine. We could still make it a bit better...

About the V8 M100 Engine

In 1963 Mercedes launched the new luxury 600 (W100) to the world, where the newly designed mighty M100 engine with 6332ccm capacity was installed. The new engine had dry oil pan and forged pistons and connecting rods. Valve seats were hardened.

It had Bosch MFI system supplying the fuel. In early versions the 8 sections FIP was used, in later ones K-Jetronic. Over time both of these systems were pain in the neck to many owners of vehicles equipped with M100 engines. The engine itself was super robust, the fuel system was its weak point.

In 1968 this engine was also used in W109 300SEL 6.3.

Significant changes were introduced in 1975 when manufacturing of W116 450SEL 6.9 began. The capacity was increased to 6834ccm and K-Jetronic was fitted.

Talking about M100, one should mention Mercedes 300SEL 6.8 from AMG, called the Red Pig (Rote Sau). The capacity of engine in this first AMG car was increased from 6330 to 6835ccm. The engine received bigger inlet valves, polished inlet air ducts, new air supply system, new camshafts, lighter connecting rods and Mahle Pistons. The engine's output increased to 370KM, then to 398KM to finally reach 428KM with torque exceeding 600Nm.