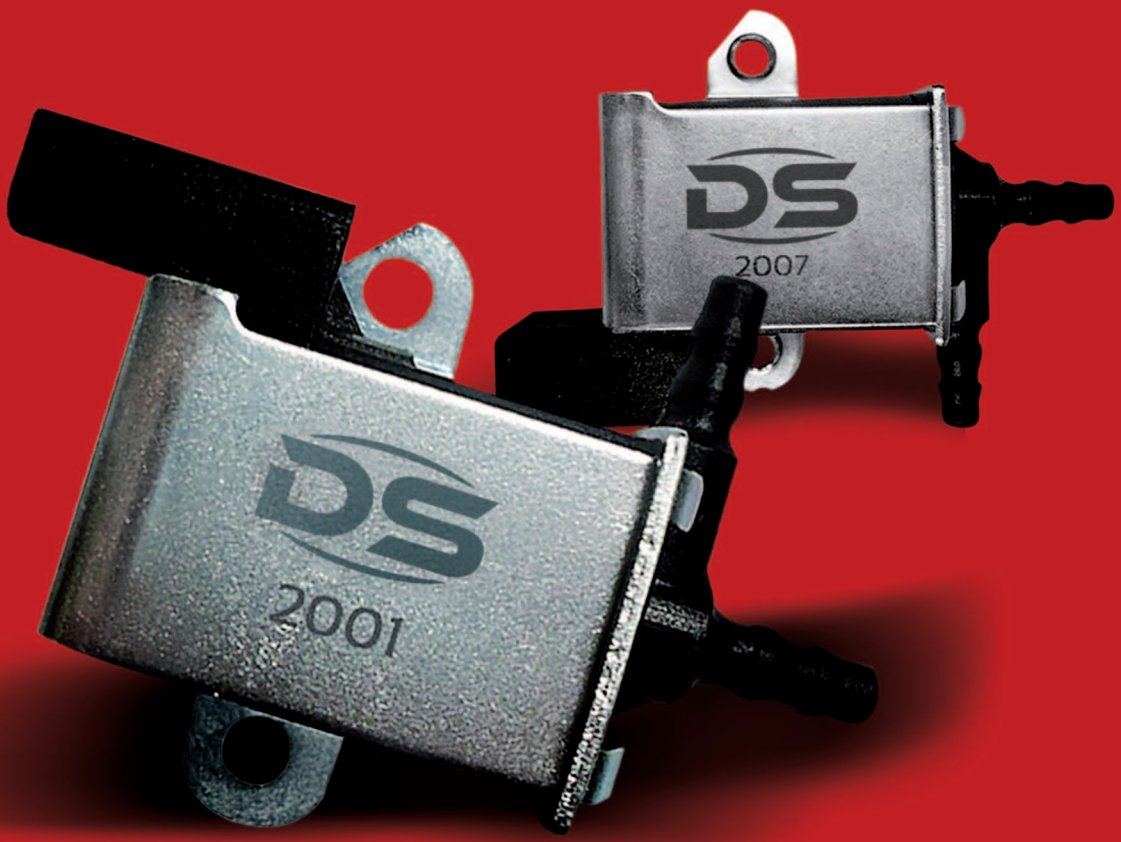
TECHNICAL NEWSLETTER
Solenoid Valve



ISO 9001 ISO TS 16949 100% TESTED PRODUCTS

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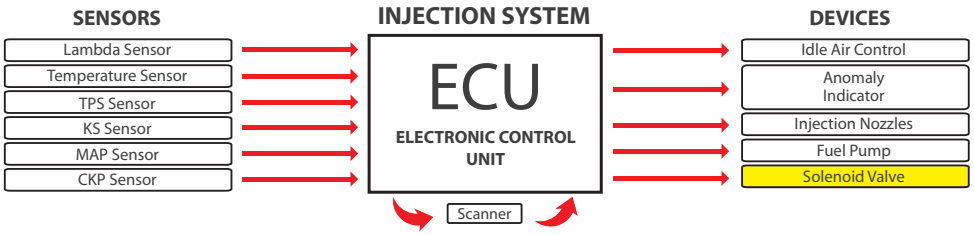
ELECTRONIC CONTROL UNIT (ECU):

Through the sensors, the ECU monitors the system operation all the time and, through the actuators, it corrects its operation.



CONCEPT:

Ethanol-powered or flex-fuel cars have difficulty in starting a cold engine. The problem lies on the fuel, not on the engine. Ethanol requires high temperatures to change its physical state to gas, unlike gasoline, which evaporates quickly. Then you need a cold-start system.

PRINCIPLE:

The cold-start system consists of a gasoline reservoir, a fuel injection pump, the solenoid valve, and the hoses.
When the switch is turned on, the ECU reads all sensors, especially the engine temperature sensor, which informs the need to activate the system.
In most vehicles, the cold-start system is triggered through a relay when the engine water temperature is below 16°C.
The fuel injection pump is responsible for keeping the system pressurized, and the Solenoid Valve (1) is responsible for controlling the flow of fuel to be injected, so that the engine starts and keeps a stable idle.

(1)

LOCATION:

For safety issues, the cold-start system is located in the flame proof wall of the engine bay.

HOW TO TEST:

In order to perform the test, we can use the multimeter.
- Testing only the Solenoid Valve (electrical test)

Resistance: Select the 200 Ω scale.
Result: approximately 21Ω. (part must be cold)
- Testing the system

Such procedure checks the operation of the pump and whether there is locking in the plunger of the solenoid valve.

1 - Remove the engine temperature sensor;

2 - Connect the wiring harness to the sensor and put in within a glass with cold water, being careful not to dive the region of the connector, and wait a few minutes;

3 - Remove the hose that is between the Solenoid Valve and the engine. There, put a hose connected to a recipient (bottle);

4 - Install another engine temperature sensor in the place (it may be a broken one) only to seal off the space. Do not connect the wiring harness to this sensor. Keep the wiring harness connected to the sensor that is in the glass with cold water;

5 - Start the engine and check if there is gasoline in the recipient.

After the test, install the correct temperature sensor (which was in the glass).

WARNING:

* We suggest fueling the reservoir with gasoline with additives, as the amount of fuel injected in the cold start is very small. These additives help the gasoline, inside the reservoir, to keep its properties without getting aging.
* The lack of gasoline in the reservoir causes rubber seals to dry, causing leakage.