

The device for measuring the parameters of the operation of solenoid control valves “Valve Tester”.

Short description

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Introduction

This passport is a document certifying the basic parameters and technical characteristics of the Valve Tester V1 guaranteed by the manufacturer for testing and verifying the performance of common rail diesel injectors. This passport allows you to get acquainted with the device, the procedure and rules for its operation, compliance with which will ensure the correct operation of the controller.

1. General information

The Valve Tester V1 is an electronic device that measures the electrical parameters of a solenoid of an electrically controlled injector any type (Common Rail, UIS, HEUI and other) and any manufacturer.

The Valve Tester is designed to diagnose and measure the operating parameters of the control solenoid valves of the fuel equipment (for example, Common Rail injectors, unit injectors and sections). The Valve Tester allows you to tune the control solenoid to ensure that it operates in the same way for all engine cylinders (to ensure smooth engine operation).

The operating parameters of the control solenoid valve are among the basic parameters (along with the hydraulic parameters of the metering device and the compression value in the cylinders) and directly affect the uniformity of fuel delivery and the uniformity of engine rotation.

The device allows you to determine the following parameters of the control solenoid valve using a control signal:

- measurement of solenoid's operating current;
- measurement of solenoid's release current;
- indirect measurement of the air gap of the solenoid valve;
- measuring the inductance of solenoid;
- measuring the active resistance of solenoid.

Now, the device allows working with the following types of solenoid control valves:

- BOSCH 799XXX;
- BOSCH 755XXX;
- BOSCH 720XXX;
- BOSCH 720XXX;
- BOSCH CRI 1;
- BOSCH CRI 2-18;
- BOSCH CRI 2-20;
- Denso 3 Ohm;
- Denso 0,5 Ohm;
- custom.

2. Instructions for use

Environmental Requirements:

- Operating temperature: +5 °C to +40 °C
- Temperature during transportation: -20 °C to +60 °C
- Relative humidity (non-condensing): working 8% - 80%, storage 5% - 95%.
- Dustiness of air: no more than 75 mcg / m³

Before turning on the device, it is necessary to check visually or with the help of devices, the condition of the connectors-adapters, the power cable 220 volts.

If the device was transferred from a cold to a warm room, it is strictly forbidden to turn it on within 1-1.5 hours.

After switching on, let the device run for 2-4 minutes, then proceed to work.

Strongly forbidden:

- turn on the device with faulty power cables;
- connect and disconnect the adapter sockets from the injector when the device is turned on;
- connect the device to a AC network that does not have a grounding loop;
- connect the device to the AC network with a cable that does not have a grounding contact;
- use the device in conjunction with electrical equipment not connected to the ground loop.

!!!Failure to comply with the last three points may result in electric shock.!!!

3. Limitations of liability

The manufacturer is not liable to the buyer of this product or a third part for damage or loss suffered by customers or a third party as a result of improper use of the product, including inept or erroneous actions of personnel, as well as for losses caused by the action or inaction of this device.

Under no circumstances will the Manufacturer Company be liable for loss of profits, lost savings, losses caused by an accident, or other subsequent economic losses, even if the company was notified of the possibility of such losses. The manufacturer is not liable for losses incurred by you on the basis of claims of a third part or caused by failure to fulfill your obligations.

The manufacturer is not responsible for any malfunctions and losses resulting from the use of additional devices recommended for use with this device, as well as its modification, repair or modification to its design, not provided for by the operating instructions, including when using a self-made adapter connector.

4. Preparation for work

Before using the device, carefully read the operating instructions. When preparing the device for operation, the following steps must be taken:

Perform an external inspection of the device and connecting cables. External inspection of the device and connecting cables is carried out with the power off and consists in identifying mechanical damage to the device and connecting cables.

5. Work with the device

Operating modes:

- mode of injector type selection and "tapping" of the injector solenoid valve (to eliminate gaps in the process of tightening the solenoid valve);
- mode of measuring the resistance and inductance of the electromagnetic control valve;
- the mode of determining the value of the opening and closing currents, as well as the gap of the electromagnetic control valve;
- the mode of setting the device parameters through the parameters menu.

Description of control elements of the device

- MENU / CANCEL button switches the display between the main operating modes of the device (the mode of measuring the active resistance and inductance of the control solenoid valve; the mode for determining the value of the opening and closing currents, as well as the gap of the control solenoid valve) and the parameter menu;
- UP and DOWN buttons switch between the main operating modes of the device (measuring the resistance and inductance of the control solenoid valve;

determining the value of the opening and closing currents, as well as the gap of the control solenoid valve), or navigate the device parameters menu;

- control knob allows you to change the parameters of the device in the menu;
- the START / STOP button starts the measurement mode;
- POWER button to turn on / off the device;

Start work with device

- Switch on the power supply of the device;
- Connect the control solenoid valve to the device using the supplied cable;
- Using the menu, select the required type of control solenoid valve;
- If necessary, measure the active resistance and inductance of the control solenoid valve;
- switch to the mode of determining the value of the opening and closing currents, as well as the gap of the control solenoid valve and start the measurement with the START / STOP button.

6. The firmware update

To update the device firmware, do the following:

1. Connect the USB communication cable to the device connector and connect it to the USB port of the PC.
2. Connect the network cable to the power connector and to the AC 220V / 50Hz.
3. Turn on the device with the power toggle switch.
4. Start the PC and run update software to update the firmware of the device.
5. Click the "Update Firmware!" Button.
6. Wait for the update process to complete.
7. Close the updater window.

7. Warranty

The manufacturer guarantees the stable operation of the Valve Tester V1 device, subject to the owner observing the storage and operation rules set forth in this passport.

The warranty period is established by the manufacturer - 18 months from the date of receipt of the product, unless otherwise specified by the manufacturer and the buyer by an additional contract.

The manufacturer notes in the warranty card the year, month, day of sale, legal address, telephone number of the company performing the warranty repair (the warranty card is in the appendix to the passport for the Valve Tester V1 device).

During the warranty period, the owner is entitled to free repair upon presentation of this passport and warranty card. After repairs are carried out, a list of troubleshooting steps is entered in the warranty card.

Not a ground for complaint: violation of the integrity of the connecting wires (adapter cables).

The manufacturer has the right to refuse warranty repair of the Valve Tester V1 device in the following cases:

- presence of traces of opening the device case;
- the presence of traces of mechanical damage on the body or electronic circuit board of the device;
- the presence of foreign objects and liquids in the housing or on the electronic board of the device;
- in case of non-observance of the rules of storage and operation of the device.

Without presenting a warranty card and in case of violation of the safety of seals on the product, claims to the quality of work and warranty repairs are not made.

During the warranty period of operation installed on the product, repairs are carried out at the expense of the owner if he does not use it in accordance with these operating instructions.

The manufacturer provides further repair of the Valve Tester OS.1111 device, after the end of the warranty period under a separate contract.

8. Frequently asked questions

Period - setting a period of measuring signal (measured parameters refresh rate)

Latency – setting the latency of measuring signal to increase the value of measured signal

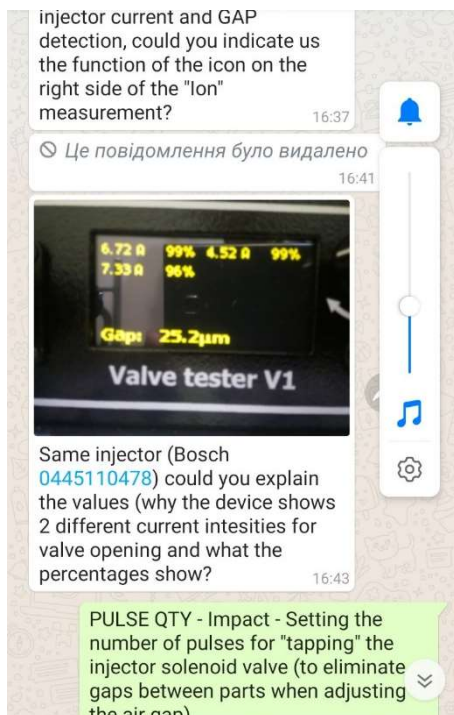
Frequency – setting the Frequency of PWM of measuring signal to increase the value of measured signal

Impact - Setting the number of pulses for "tapping" the injector solenoid valve (to eliminate gaps between parts when adjusting the air gap)

Measure, Pause - Number of measurements and pause between measurements (for measurement sequence). Not relevant for future firmware.

PULSE QTY - Impact - Setting the number of pulses for "tapping" the injector solenoid valve (to eliminate gaps between parts when adjusting the air gap)

PULSE START – start sequence of pulses for "tapping" the injector solenoid valve





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In Detail view device is displaying all (up to 4) detected points (current value, relative amplitude (in percent, relative to the max amplitude) for Ion and Ioff).

When Detail view is disabled device displaying only one point (for Ion and Ioff) with max amplitude.