

❖ **IMAGE**

Image of SENSOR KIT - 13 full set

❖ **OVERVIEW**

- SENSOR KIT-13 is a product of DTDAUTO Vietnam in 2013
- SENSOR KIT-13 designed used for vocational training of vehicle electronic fuel injection system
- SENSOR KIT-13 is a compact, flexible, effective teaching device, suitable for research and in-depth training of students in automotive electricity and fuel. Very convenient for teaching in many places moved by personal motorcycle or cars.
- Equipment building on real parts of the Toyota electronic fuel injection system with full function as "Input, ECU, Output"

❖ **PURPOSE**

Teaching aids and learning aids for teachers and students of automobile vocational training schools:

- Understand basic sensors on the new OBD-II standard of Cars
- Understand the structure, principles and operating principles of sensors with fuel injection and electronic ignition system
- Understand, analysis the dependence between the INPUT (signal input sensors) and OUTPUT (signal control actuators) through ECU (electrical controller)
- Understand the system's electrical circuit diagram and the actual installation location of components on the vehicle (according to accompanying documentation).

- Understand how to diagnose faults and repair them through different methods:
  - + *Replacing and excluding*
  - + *Find fault position via analyzing on electrical wiring diagram*
  - + *Find fault by intelligent diagnostic tools and other measurement equipment*

## ❖ BASIC SPECIFICATION

### A. The equipment

- Includes full sensor system used on OBD-II engine of Japan Toyota manufacturer

Sensors	ECM	Actuators
- 01 Intake air sensor unit ( <i>THA, MAF</i> ) - 01 Engine temp. sensor ( <i>THW</i> ) - 01 Oxygen sensor ( <i>HO2S</i> ) - 01 Throttle position sensor ( <i>TPS</i> ) - 01 Knock sensor ( <i>KNK</i> ) - 01 Engine speed sensor ( <i>RPM</i> ) - 01 Cam shaft position sensor ( <i>G</i> ) - 04 Switch as AC, STA, STP, Power Steel Switch ( <i>PSS</i> )	01 ECM – Engine Control Module	- 01 injector - 01 ignition coil, igniter, spark - 01 ISC valve - 01 Check Engine Light

- Installed according to the practical KIT model. The sensors can operate as on a car with a 12VDC power supply integrated inside.

- The connectors with electrical diagram principle allow learners and teachers test, check actual parameters (*Live data*) convenient.

The connector pins and schematic diagram allow learners and teachers to conveniently measure live data.

- "PAN MAKER" able to create basic faults for learning and teaching: there are 02 options create fault by normal switches or setting on computer.

- The connector used exchange data with a computer or scanner

- Use measuring by Multi-meter and AutoScope (*pulse measuring device*)

- Use PC Diagnostic scanner (*high serial data*)

### B. Document and software for training:

- Electronically pdf file support training with text, images, animation, animations for new ignition and electronic fuel injection systems. It is suitable for teaching with projector and multimedia training

- OBD-II software for read/ clear fault codes, show Engine Live data

- AutoScope software, PAN Maker software...

## ❖ PACKAGE

- 01 OBD-II KIT sensors

- 01 full set of equipment for OBD-II Diagnosis (EFI SCAN)

- 01 Multi-meter

- 01 full set of PC Auto Scope equipment for check automotive signal pulses

- 01 USB memory of DTD CODE software license used for: lookup fault codes, vocational training

- 01 English guidebook
- Some cable accessories

**❖ OTHER SPECIFICATIONS**

- Voltage used: 12VDC/50A;
- Weight: about 35 kg
- Actual product size: 80 x 43 x 42 (cm)
- Weight total Package about 40kg
- Package size: 84 x 46 x 44 (cm)
- This kind of product is indoor-equipment

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