

❖ **IMAGE**

Image of SENSOR KIT - 13 full set

❖ **OVERVIEW**

- SENSOR KIT-13 is a product of DTDAUTO Technology Team/ Institute of Physics in 2013
- SENSOR KIT-13 designed used for vocational training of vehicle electronic fuel injection system
- SENSOR KIT-13 is a compact teaching trainer, flexible, efficient, appropriate research, training course on 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"**
- SENSOR KIT-13 manufactured in Vietnam, according to the standard equipment of the Vietnam vocational training.

❖ **PURPOSE**

Being teaching aids and educational tools teaching for teachers and trainees training schools vocational automobile:

- Understand all of components basic sensors on new OBD-II standard of Cars
- Understand principles and principles working of the sensors with electronic fuel injection system & ignition
- Understand, analysis the dependence between the INPUT (signal input sensors) and OUTPUT (*signal control actuators*) through ECU (*electrical controller*)
- Understand electrical wiring diagram of system, installation position structure actual event on the car (*according to accompanying documentation*).
- Understand ways trouble diagnosis and repair by the different methods:
 - + *Replacing and excluding*
 - + *Find fault position via analyzing on electrical wiring diagram*
 - + *Find fault by interligent 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
<ul style="list-style-type: none"> - 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>) 	<ul style="list-style-type: none"> 01 ECM – Engine Control Module 	<ul style="list-style-type: none"> - 01 injector - 01 ignition coil, igniter, spark - 01 ISC valve - 01 Check Engine Light

- Installation KIT practices style for transported by hands. Sensors can work as Car with 12VDC power adaptor integrated inside.

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

- "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

- 01 Multi-meter

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

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

- 01 English guidebook

- Some cable accessories

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