

**❖ IMAGE****❖ INTRODUCTION**

- Training equipment for Anti-lock brake system (Model 3.0) is research product of DTDAuto Vietnam.
- Equipment is perfect specialized equipment for vocational schools where trainees are taught both theory & practice of ABS
- Equipment includes an ABS instrument model, software on computer, a synchronously coupled electronic block and a diagnostic equipment to form a standard, modern & professional teaching set.
- ABS 3.0 provide all basic elements in technique training such as: Listening, Watching and Acting. It also provides online multimedia simulation with specialized software.
- Construction of the system is built based on real parts of ABS system. ABS software is used to control, simulate, display and graph the operation
- ABS is designed, manufactured with the German standard set of training equipment

**❖ PURPOSE**

- Used as teaching and learning tools for technical research and training for universities and vocational training centers of automotive engines.
- Students understand the basic components of the ABS system
- Understand the advantages and disadvantages of anti-lock braking system (ABS) compared to non-ABS braking system
- Understand the structure, principle and operating principle of ABS system- Understand the circuit diagram of the system and the actual installation location of components on the vehicle
- Learn how to diagnose errors and fix them

**❖ SPECIFICATION**

- Equipment is mounted on the frame with movable wheels, full of equipment of ABS system such as: ABS control module, speed sensors, pulse wheels, brake master cylinder, ABS pump, motor vv... operation and running as same on the cars..
- ABS 3.0 have DLC3 diagnostic connector that connect to diagnostic tool to read information and diagnose fault
- Equipment used to learn the principles, structure, repair, practice skills in diagnosis, error handling, operation skills in repairing by traditional methods, by computers and fault diagnostic tool.
- This is a full system of e-textbook including: audio, static images, animation, video clip of ABS structure & operation
- Graph the ABS process when braking, comparison between brakes with ABS and brakes without ABS
- Support electrical wiring diagram on the equipment to help students understand and analyze the operating principle of the system.
- The system communicates with a computer to support training: read/ clear fault code, reset ECU, view live data, active actuator, survey the characteristics of ABS.

**NEW FEATURE IN ABS 3.0**

- Equipment is designed with sensors, actuator unit and original ECU on automobile.
- Model structure includes 4 sensors and 4 pulse wheels that work independently for a variety of training situations
- The model is capable of operating completely independently of the computer or automatically controlled from the computer
- Use new generation ABS system (two-state valve). Used brake master by pneumatic
- Use original brake master cylinder by Pneumatic on automobile
- The system uses DLC3 diagnostic port to connect to diagnostic equipment to read information and diagnose fault
- Vivid design with indicators on the model
- The system is quieter and more stable
- Support principle circuit diagram and component position of ABS system on the equipment

**Software on computer:**

- E-textbook are edited and supplemented to be more suitable for using projector, use for multimedia classrooms.
- Training software is optimized with high resolution, works well with Win7 and uses standard RS232 or USB communication port. The printer port is used independently for printing.
- Surveying the operating characteristics of ABS brakes and sensors through the operation of real parts of ABS brakes in cars.
- The characteristic survey section of the ABS system is professionally designed and allows more options in measuring, displaying and printing. The function of creating PDF files when the computer installed Acrobat and some other advanced features.

- Combined with the hardware equipment of ABS system, students can directly observe the operation of the system and practice with the fault diagnosis system by different methods

+ Method of fault diagnosis by flashing of ABS light

+ Method of fault diagnosis with OBD scanner on computer. The professional diagnostic scanner based on software on computer is used to read/ clear errors, reset the ECU, display current parameters and activate actuators, set up, install the system.

- The software for pairing and reading fault through the DLC3 diagnostic connector supports functions: reading fault, displaying current parameters and operating status of the system, activating actuators for testing and support special functions such as reset memory...

### **Pairing accessories:**

- The electronic part for surveying ABS characteristics is integrated in the ABS model.  
- Fault diagnosis device combined with the software on the computer is used to read / clear the fault, reset the ECU, view the current parameters and activate the actuator. The ABS training equipment is designed to be able to connect with a computer during operation, creating a multimedia teaching device system that meets the Computer Based Training and Media Training (CBT & Media) modern teaching equipment standards today.

### **❖ COMPONENTS**

- Main equipment of ABS training equipment on a stand with movable wheels
- ABS electronic adapter
- Data cable to connect computer and equipment
- USB/ CDROM used to stored data
- Computer, printer and bracket (optional)
- User guide
- Battery 12V/50A

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