

EAU-963

ABS / EDS / ESP Trainer

This trainer is designed to aid in the training of subjects related to new technologies being applied to combination antilock braking systems (ABS-EBD), electronic differential lock systems (EDS traction control) and electronic stability programs (ESP) with genuine components, the same as used in the latest generation of the Ford Focus. The trainer is equipped with all of the components and accessories necessary to simulate the real conditions experienced with a car.

Ref.: 9EQ963EA6C - 230 V

Ref.: 9EQ963EA3C - 115 V



Teaching application

The teaching model is based on activities with genuine car parts arranged to facilitate the student's learning process:

- The application is real, with all of the pieces of the vehicle that are to be learned about effectively integrated (electrical installations, connections, cabling, components, circuits, etc.)
- Help in significantly reducing procedural activities learning time, thanks to the easy accessibility to the components, connectors and verification points. In addition, the characteristics of a car mounted motor are preserved.
- The instructor has the possibility of demonstrating the various systems and how to check the symptoms of different malfunctions.
- It enables students to develop diagnostic capabilities using professional tools and to repair break-downs.
- It is motivational for the students.

Teaching characteristics

The student will develop many skills using this equipment:

1. Traction and brake system maintenance.
2. Verification and analysis of components and systems.
3. Brake circuit analysis.
4. Component analysis.
5. Reading of diagrams.
6. Operation of instruments.
7. Diagnosis and repair of breakdowns.
8. Simulation of malfunctions, verification and symptom recognition.

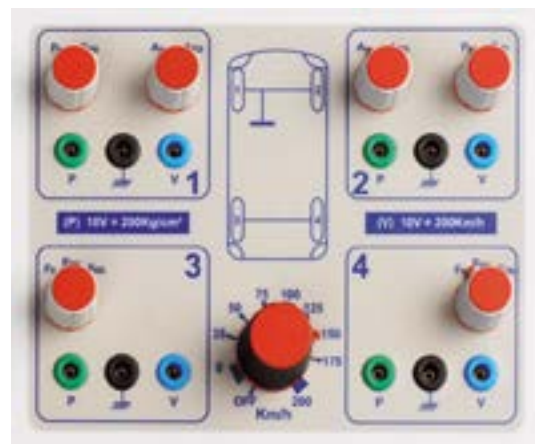


SIRVAUT Software integrated into the equipment.

Teaching features

The training system can be adjusted to test the reactions of the ABS/EDB as well as the EDS in any possible operational situation.

- Different braking situations can be generated through the use of 4 switches; normal braking, sudden braking causing ABS activation, and rear axle braking activating the EBD.
- Conditions of low traction at acceleration causing the EDS to activate can be generated through the use of 2 switches.



BREAKDOWNS

Using a repair program system, the trainer can introduce malfunctions or breakdowns to the motor.

There are two options:

- Interactive computer-aided virtual repair system for breakdowns (SIRVAUT) which enables not only breakdown analysis but also virtual repair generating a history log for evaluation by the instructor.
- Manual breakdown repair system (using switches).



User Manual.

Contains information about how the equipment operates, standards for using it, characteristics, maintenance, electrical diagrams, list of breakdowns and their symptoms, etc.

Practice Activities Manual.

The manual proposes different types of activities that can be carried out using the trainer. It includes answers and appropriate solutions to the problems presented in order to make the teaching process easier. Individual identification of components,



system identification, signal verification, reproduction and identification of breakdown symptoms, search and locate breakdowns, defect resolution proposals, virtual repair, etc.

Technical characteristics

- On / Starter switch.
- ABS module.
- ABS-EBD/EDS control unit.
- Tandem brake master cylinder.
- Hidraulic control unit.
- Brake switch.
- Brake indicator light.
- Instrument panel with multiplex network:
 - ABS indicator light.
 - ESP indicator light.
- System fuse box.
- Four crowns with fully independent speed regulation.
- Four new automobile active receivers (magneto-resistant).
- Four switches for simulating the possible braking conditions of a car, both normal and sudden.
- Two switches for simulate low traction at acceleration in order to activate the EDS traction control.
- Five gauges incorporated into the panel in order to read the pressure of the servo and each wheel.
- Accelerator pedal.
- Brake pedal.
- Standard EOBD (EOBDII) connection.
- Module to general 16 breakdowns (8 for the ESP), through switches protected by a cover and lock, or through a virtual breakdown repair software.
- The equipment is mounted on wheels.
- Accessories for studying the electronic stability program ESP (Optional):
 - Direction position sensor.
 - Skid direction sensor (with multiplex).
 - Electronic Control Unit (ECU) motor.
 - Switch to disconnect the ESP.
 - Steering wheel.
 - Car body.
 - Control Panel.
- Dimensions and weights:
 - Equipment dimensions: 830 x 875 x 1.770 mm.
 - Package dimensions: 1.025 x 1.080 x 1.955 mm.
 - Package weight: 190 Kgs.

Optional accessory

STABILITY CONTROL ESP

Electronic stability control accessory (ESP) for cars, a feature of and **only applicable to trainer:** EAU-963 ABS / EDS Braking systems.

Adjusting the equipment enables all the reactions, both of the ESP and the ABD as well as the EDS to be checked during possible operating situations for these systems.

A breakdown generation module, by means of switches protected with a cover and a key, or using the virtual breakdown separation software built into the EAU-963 trainer.

Technical characteristics:

- Column sensor.
- Vertical axle and transversal acceleration sensor.
- ESP disconnection switch.
- Steering wheel simulator.
- The equipment enables the different pressure curves and deceleration or acceleration of the system to be viewed using an oscilloscope.

Teaching support:

- User manual.
- Practice activity manual.
- SIRVAUT software:
 - Breakdown control (8 x 3 levels of difficulty) and virtual repair of the same.
 - Tool provides classroom management and student assessment.
 - Communication connector.

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New original components



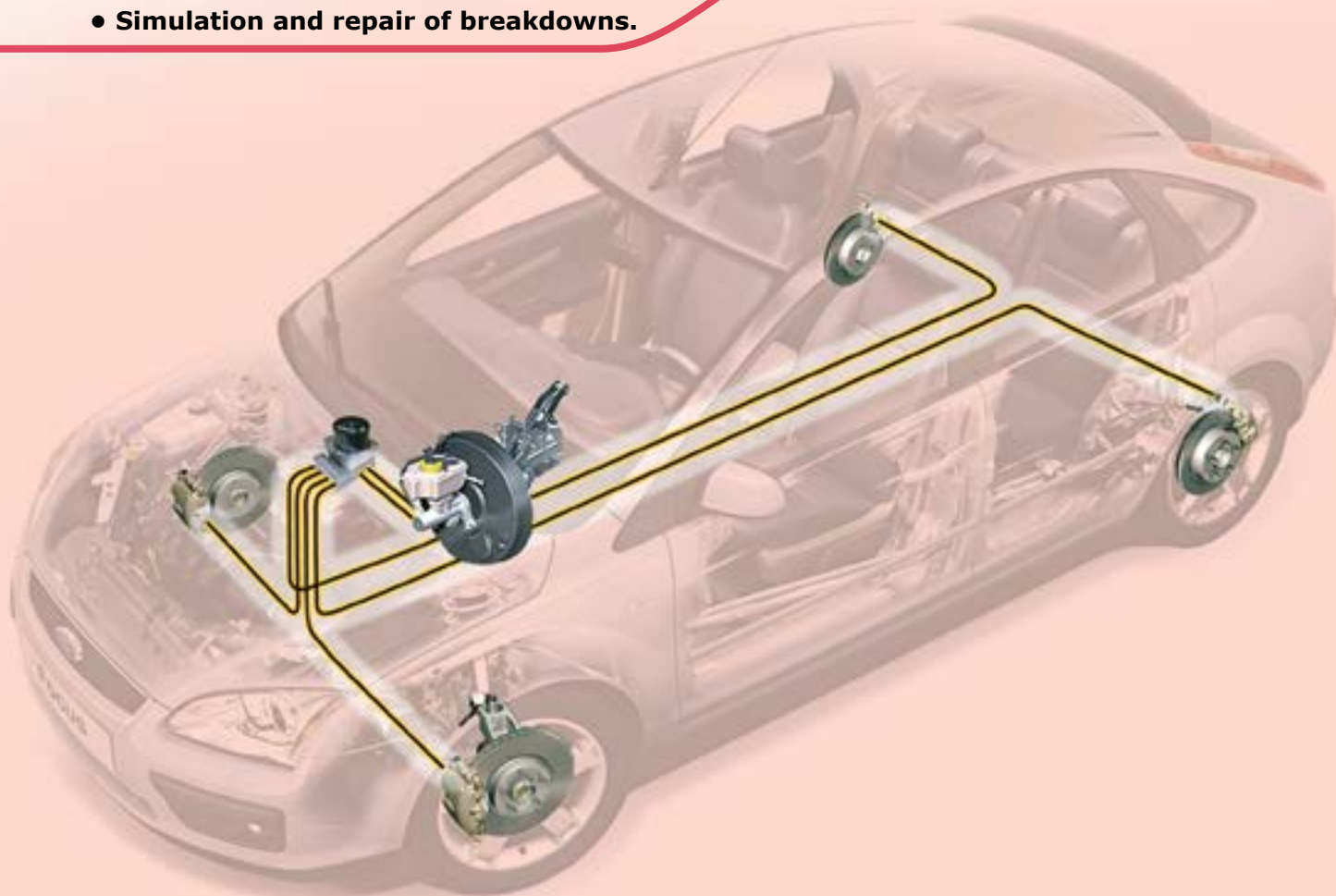
The components he components used to build the trainer are original, new from the manufacturer, so that the difference between training practice and a real workshop will be minimal.

Fuses, EOBD connector, SIRVAUT and ESP connector.



ABS / EDS / ESP Trainer

- **Genuine components.**
- **Antilock brake system ABS-EBD.**
- **Electronic differential-lock system EDS (traction control).**
- **Electronic stability program ESP (Optional).**
- **Servo-brake system.**
- **CAN-BUS multiplex network.**
- **Diagnosis.**
- **Simulation and repair of breakdowns.**



Using the trainer's oscilloscope, the different pressure, acceleration and deceleration curves can be viewed.



A system enabling analysis, diagnosis and repair of breakdowns is incorporated into the control panel.

- Terminal plate enabling the measuring of all static and dynamic signals involved in the ABS-EBD / EDS system.
- Breakdown generation module, through the use switches protected with a cover and lock, or through virtual breakdown repair software.
- Equipment usage authorization switch.

