

Fully functional air conditioning and climate control system trainer is installed in a mobile aluminium frame. This training board – simulator is specially designed to help technical students understand better electronic air conditioning and climate control system CLIMATronic. The educational training board is based on Audi/VW OEM components. The integrated air conditioning and climate control system shows the different operation modes.

The training board-simulator is a great educational tool that allows students to learn the structure of air conditioning and climate control system, study its components, and perform various measurements, tests and other diagnostic procedures to use diagnostic scan tools or other special tools and equipment.

Technical specifications and functions

Integrated electronic air conditioning system with climate control (Climatronic) and expansion valve;

Monitoring operation modes of air conditioning and climate control system;

Visible HVAC compressor, electromagnetic compressor clutch and its operation modes;

With installed pressure gauges it is possible to monitor the pressure distribution of R134a refrigerant in the high and low pressure sides (circuits);

Visible HVAC (heating, ventilating and air conditioning) mixing unit with its operation modes;

Visible the operation of air flow flaps;

Ability to monitor and control changes of the parameters of each system component:

- The air flow fan speed
- The air flow flap positions
- The interior (inside) temperature
- The refrigerant R134a pressure changes depending on the speed of the cooling radiator fan
- The rate of the temperature change depending on the speed of the air flow radiator fan
- The air flow flap position according to operation modes: defrost, air recirculation (fresh air) or footwell

The training board has a diagram with LED's which shows the operation modes of the outlets and flaps;

The training board has a complete electric wiring diagram with built – in banana plug jumpers for measurements and simulation of the system fault codes;

Ability to simulate more than 15 system faults by disconnecting banana plug jumpers. Ability to monitor the changing operation mode of each system component;

The training board has an integrated voltmeter. It displays voltage of electronic system components:

- G92 Control motor potentiometer for temperature flap
- G114 Control motor potentiometer, footwell/defroster flap
- G112 Control motor potentiometer, central flap
- G113 Control motor potentiometer, air flow flap
- G89 Fresh air intake duct temperature sensor
- G191 Vent. temperature sender, center
- G192 Vent. temperature sender, footwell
- G17 Ambient temperature sensor

The integrated thermometer displays the temperature change depending on the pressure of the refrigerant R134a;

Diagnostic and measurement

Oscilloscope/multimeter

System's parameters are measured by connecting to the banana connector;
Ability to measure electrical signal parameters of each system component (such as sensor or actuator)

Control unit diagnosis (with the scan tool)

Diagnosis through OBD 16 – pin diagnostic connector
Electronic control unit (ECU) identification
Reading/erasing fault codes
Displaying the operating system parameters (live data)
Activating the actuators (depends on the control unit)
Control unit encoding/configuration (depends on the control unit)
Control unit diagnosis (manual procedures without the scan tool)

Manual diagnostics of Climatronic ECU

Error reading – manual procedures
Displaying the operating system parameters (live data) – manual procedure

Other

The stand has a closed structure – internal wiring is not visible
Power supply: 220V
Dimensions approx.: (HxLxW): 1680x800x500mm
Nett weight approx.: 100 Kg
Made in EU
CE certificate

Optional accessories

Automotive oscilloscope
OBD Diagnostic scan tool
Air conditioning recharge station