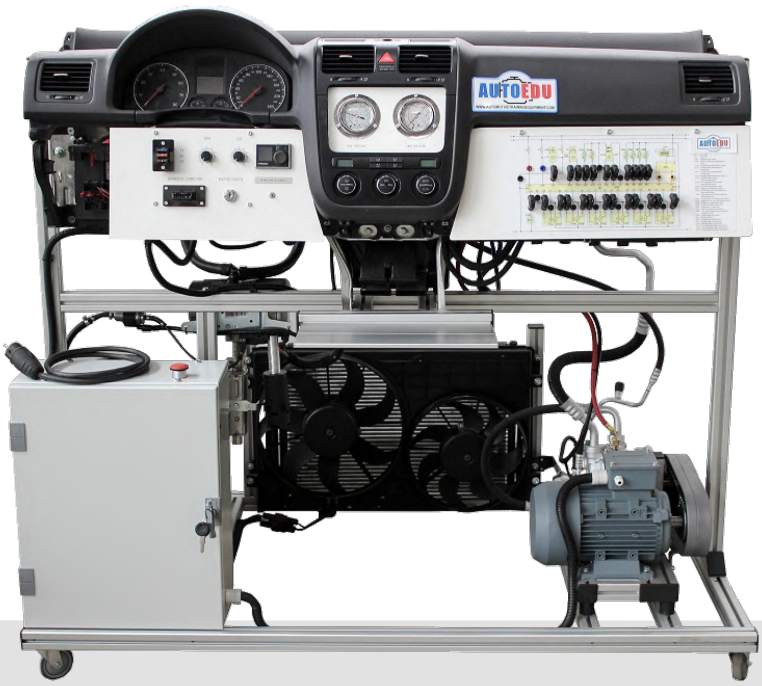
DUAL ZONE AIR CONDITIONING AND CLIMATE CONTROL EDUCATIONAL TRAINER

A7

Product number

MSC03-D

Complete educational system designed to demonstrate the operation of a dual-zone automotive air conditioning and climate control system with an integrated auxiliary heater. It provides hands-on training for studying real HVAC control principles, component functions, and diagnostic procedures using genuine automotive parts.



Features

- Dual-zone automatic climate control with independent temperature adjustment for driver and passenger sides.
- Integrated auxiliary heater system for enhanced heating performance in low-temperature conditions.
- Real automotive components including compressor, condenser, evaporator, expansion valves, blower motor, and sensors.
- Electronic control of air distribution fl aps, blower speed, and temperature via OEM climate control panel.
- Visualization of refrigerant and air fl ow through transparent sections and clearly labelled components.
- Diagnostic sockets and test points for oscilloscope and multimeter measurements.
- Fault simulation module for guided troubleshooting exercises.
- Mobile, durable frame designed for classroom and laboratory use.
- Safe low-voltage power system with full electrical protection.

Value for Students

- Study the structure and function of dual-zone HVAC systems with auxiliary heating.
- Understand temperature control algorithms and actuator operation.
- Learn how to perform diagnostic tests on climate control systems.
- Monitor real sensor and actuator signals with test instruments.
- Practice system troubleshooting and fault identification using simulated malfunctions.
- Observe refrigerant and air flow paths through the entire HVAC system.

Value for Instructors

- Enables live demonstrations of HVAC system operation and control logic.
- Includes integrated test points and fault simulation for practical teaching exercises.
- Supports diagnostic tool integration for interactive lessons.
- Safe, durable, and mobile construction suited for classroom or workshop environments.
- Provides structured, repeatable experiments for group or individual assessment.
- Simplifies explanation of refrigerant circuit, electrical control, and system components.

Specifications

- System type: Dual-zone automatic air conditioning with auxiliary heater.
- Main components: compressor, condenser, receiver-drier, expansion valves, evaporators, blower motor, climate control panel, actuators, sensors.
- Electrical connections: integrated test points and diagnostic sockets.
- Refrigerant: R134a (environmentally compliant).
- Power supply: 230 V AC to 12 V DC (protected).
- Dimensions: 1400 × 1000 × 1800 mm (55.1 × 39.3 × 70.8 in).
- Weight: approx. 120 kg (264.5 lbs).