DUAL-ZONE AIR CONDITIONING AND CLIMATE CONTROL

A7

Product number

MSC04-R1234YF-D

Fully functional Dual-Zone air conditioning and climate control educational trainer includes a dual-zone air conditioning system, an auxiliary diesel heating unit, and an electronic climate control system based on Audi/VW OEM components. This trainer is engineered to demonstrate the operation modes of modern air conditioning systems, facilitate hands-on learning, and enable detailed diagnostic and troubleshooting exercises using OBD diagnostic tools and other specialized equipment.

Features

- Fully functional system using R1234yf refrigerant, capable of independent temperature control for driver and passenger zones.
- Integrated auxiliary heater to demonstrate heating functions and the interaction with the climate control system.
- Advanced 2C Climatronic system for precise control of HVAC functions.
- Exposed HVAC compressor, electromagnetic compressor valve, mixing unit, airflow flaps, and refrigerant pressure gauges for educational purposes.
- OBD 16-pin diagnostic connector for ECU identification, fault code management, and live data monitoring.
- Ability to monitor operational parameters of all system components, including airflow fan speed, flap positions, and refrigerant pressures.
- Integrated fault code simulator with the ability to induce over 15 different system faults.

Value for Students

- Fully functional dual-zone air conditioning system, including an auxiliary heating unit and electronic climate control.
- Complete electrical wiring diagram, perform measurements using banana plug connectors, and simulate system faults.
- Monitor and control HVAC (heating-ventilation-air conditioning) components, such as the airflow fan speed, flap positions, and interior temperature.
- Understand and measure the pressure distribution of R1234yf refrigerant in high and low-pressure circuits, and observe temperature changes in response to cooling radiator fan speeds.
- Use oscilloscopes, multimeters to measure system parameters and OBD diagnostic tools to read/erase fault codes, display live system data, and activate actuators.
- Simulate more than 15 system faults by disconnecting banana plug jumpers, enhancing troubleshooting skills.
- Learn the operation of the auxiliary heating unit, including starting, heating modes, and fault lock-out procedures.
- Adjust parameters such as refrigerant pressure, airflow flap positions, and fan speeds to observe their effects on system performance.
- Safe, durable and mobile construction with internal wiring for best learning experience and safe environment.

Value for Instructors

- Fully functional Dual-Zone air conditioning and climate control with R1234yf refrigerant system for detail learning about automotive climate control systems.
- Provide thorough education on HVAC systems, enhancing students' diagnostic and troubleshooting capabilities.
- Provides easy, safe, and comfortable training that builds confidence, using OEM components to offer a realistic car repair experience.
- Board on castors version, which is mobile and space saving in the classroom, allows concurrent use by multiple students, promoting collaborative learning and practical training opportunities.
- Simulate faults and measure system parameters to create dynamic, interactive lessons that enhance student engagement and understanding.
- The training stand is designed for simplicity, requiring only small adjustments to reset to default parameters, making it easy to prepare and start each lesson quickly and efficiently.
- Plug and play design, requiring no additional mountings, assembly, or special preparation for operation.

Specifications

- Dimensions: 1100 x 700 x 1240 mm (43.31 in x 27.56 in x 48.82 in)
- Power supply: 24 V DC
- Product number: MSPPS01