



ELECTRIC DRIVE TRANSMISSION SYSTEM TRAINING BENCH



DL DM47

LEARNING EXPERIENCE

The training bench is designed to develop the knowledge about main components installed on electric vehicles. The bench reproduces the same functions and control mode of the most popular pure electric vehicles.

This trainer closely represents:

- the connection and control relationship among the core components of electric drive systems related to the use of new types of clean energy;
- the installation position;
- the operating parameters;
- the safety precautions for high voltage system.

It is developed to improve students' ability to analyse and process the failures of these types of electric drive system.

GENERAL CHARACTERISTICS

- Dim. mm (HxLxW) : 1800x1600x1200
- Weight approx. 300 kg
- Auxiliary battery: 12V 45AH.
- Power battery type: Environment-friendly lithium iron phosphate power battery (square aluminum case, single battery 3.2V 50AH)
- Capacity of power battery pack: 72V 50AH (3.7 kilowatt-hour)
- Input power supply: AC 220V±10% 50 Hz
- Operating functioning temperature: -5°C to +40°C

MAIN CHARACTERISTICS

This trainer shows the structure and logic control relationship of all main components that can be found in an electric drive system related to the new types of clean energy.

All components are installed on the bench, with the same electrical connection mode as real vehicles, convenient for assembly and disassembly. This trainer makes students learn the disassembly points and safety protection of high voltage system components during disassembling and assembling connection.

The connecting lines can be scanned with the help of a two-dimensional code, after which, their assembly and disassembly methods and precautions can be completely demonstrated on the screen.

Main components:

- Detection control panel (with various detection terminals)
- Ignition switch / Dashboard
- Lithium iron phosphate battery
- Battery real-time details display screen
- Vehicle-mounted charger and charging plug
- DC-DC (From 72v DC to 12v DC) converter
- Electronic throttle assembly
- Shift mechanism assembly
- Driving motor / Motor controller
- Gearbox / Driving shaft /Front wheel disc brakes



ACCESSORIES

Suggested instruments for best practice:

- Digital Multimeter (not included)

- Magnetic powder brake / Adjustable tension controller
- Booster pump assembly / Vacuum pump assembly / Vacuum tank assembly
- Auxiliary battery / Battery Management System (BMS)
- Emergency power switch

OTHER CHARACTERISTICS

- a) Power battery pack display and instruments are installed on the teaching board, where there is a circuit control chart. Pressing the accelerator, students can observe all the parameters about the running status of the vehicle and master the operation control logic of pure electric vehicle and the law of parametric variation of main components. With the help of a smart switch, the control logic under each state can be reproduced on the screen.
- b) The training bench consists of a main bench and a teaching board. The bench is placed horizontally for installing main components. The teaching board is placed vertically and connected with screws. At the bottom of training bench, 4 wheels are installed for moving flexibly, which also has self-lock device for fixing position. Pivoting wheels are mounted.
- c) The power battery pack is designed to be translucent with built-in LED bank lights for lighting so that students can observe the internal structure of battery.
- d) With real mechanical gear transmission and brake system, students can observe the braking energy feedback current variation and master the concept of braking energy absorption.
- e) The training bench has an electric vacuum assisted hydraulic brake system and switch signals can be controlled intelligently through pressure sensor.
- f) The training bench is equipped with a 12V power ground mechanical switch that can disconnect the 12V ground from time to time to disconnect the power supply of the whole system.
- g) The training bench is equipped with brake shield and other safety protecting devices for a safe use of students.
- h) It is equipped with intelligent fault setting and appraisal system.