

LHP 105 AUTOMECHANICS



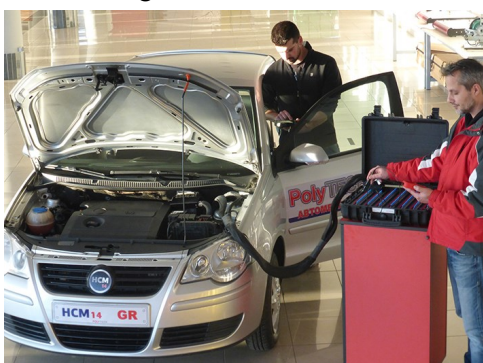
The LHP-105 laboratory covers all areas, theoretical and practical, concerning all **Automotive Engines** and **Automotive Sub-systems** included in various types of Automobiles. The laboratory consists of a set of simulators, trainers and equipment listed on the right of this page.

The laboratory is designed to provide students with automotive training program introducing various systems and components in modern cars. It brings a comprehensive view of the entire sub systems in the car, the system's components and their interconnection, functions, operation, signals, diagnosis and repair methods under hands-on safe activities.

The equipment is provided with all the necessary instruments as well as the sub-systems for execution of exercises and the experimental-practical exercise of the students.

The laboratory equipment is accompanied by the appropriate **software** to run interactively with PC workstations, wherever this is applicable. The software is organized in subjects corresponding to the simulations and the experimental exercises with scope:

- A series of aims for the specific experiment and the level of knowledge that must be obtained.
- Theoretical background relevant to the lesson as well as practical examples of use.
- Tests/Questions for the students and fault testing.



HCM14 Laboratory Fault & Diagnostics Trainer lab

HCM14 E Petrol Engine - Operating Motor (Test Motor)

PT-AM31 Fuel Injection System

PT-AM06 Emission Control System

PT-AM32 Injection Control System

PTS-3574 Car Air Conditioning & Climate Control Simulator

PT- AMH1 Hybrid Automotive

PTS-3577 Suspension Simulator

PTS-3578 Safety Systems Simulator

PTS-3579 Transmission Simulator

PT-2A Electronic Multipoint Petrol Injection

PT-915 Injection Unit Demonstrator

PT-30 Chassis Front Wheel Drive Transversally Mounted Petrol Engine

Sectioned Automechanical Models

PT-001 Steering And Suspension Model

PT-101 Diesel Engine Model

PT-111 Petrol Engine Model

PT-151 Automatic Gearbox - Crank Operated

PT-157 Hydraulic Control Clutch Section

PT-157-1 Hydraulic Control Clutch Cross Section

PT-172 Rack Power Steering Section Model

PT-214 Catalytic Silencer With Lambda Probe

PT-242 Air Compressor Cut Model

PT-1031 Single Body Carburetor

PT-1033 Vertical Twin Carburetor

PT-1034 Vacuum Carburetor

PT-1065 Air Conditioning Cut Model

HCM 14 Laboratory Trainer Lab

Automotive Fault and Diagnostics Trainer Lab



The HCM 14 Laboratory Trainer Lab is aimed to offer a hands-on training in conjunction to a real operational 1:1 scale car model or operating engine with **built-in Fault ECU simulator** and **Diagnostic tools** for complete Automotive and Auto electrical maintenance and service training. It includes:

- **HCM 14 CB** - Control Board.
- **HCM 100** - Diagnostic electronic hand-held tablet with a wireless OBD II adapter and a 21 inch monitor.
- **HCM 88** - Professional Auto shop Diagnostics Terminal with all accessories.

HCM 14E Trainer

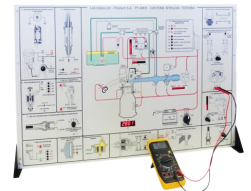
Petrol Engine - Operating Motor (Test Motor)



The HCM 14E Engine Motor is a **fully functional** gasoline car engine with OBD on board . With HCM 14E, teacher and students can perform a wide range of tests on the mechanical and electrical subsystems of any automotive engine when connected to the HCM 14 CB console. This trainer can be used instead of the HCM 14 operational half car option.

PT-AM31 Simulator

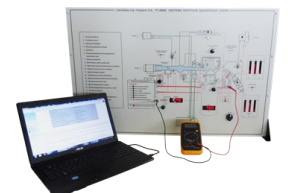
Fuel Injection System



PT-AM31 Fuel Injection System simulator provides a complete simulation process and troubleshooting of the automotive Fuel Injection System, including the sensors, devices and controls which are found in such automotive subsystems.

PT-AM06 Simulator

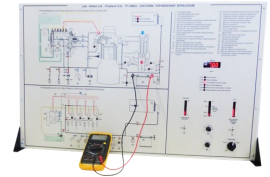
Emission Control System



PT-AM06 Emission Control System simulator provides a complete simulation process and troubleshooting of the automotive Emission Control System including the sensors, devices and controls which are found in such automotive subsystems.

PT-AM32 Simulator

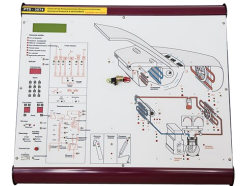
Injection Control System



PT-AM32 Injection Control System simulator provides a complete simulation process and troubleshooting of the automotive engine common rail direct Injection Control System including the sensors, devices and controls which are found in such automotive subsystems.

PTS-3574 Simulator

Car Air-Conditioning And Climate Control Simulator



The PTS-3574 simulator for Car Air-Conditioning And Climate Control provides a training platform for exploring the process the operation and troubleshooting of a typical car air conditioning system, its subsystems, its components and other operational parameters.

The simulator includes **real components** and **simulation components** modules. The experimenting panel includes the system drawings with test points.

PT-AMH1 Simulator

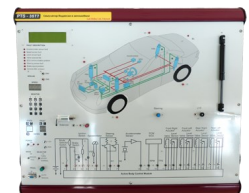
Hybrid Automotive



PT-AM H1 Hybrid Automotive system simulator provides a complete simulation process and troubleshooting of operation of a typical Hybrid Automotive system with a parallel coupling between the internal combustion engine and the 3phase electric automotive motor.

PTS-3577 Simulator

Suspension Simulator

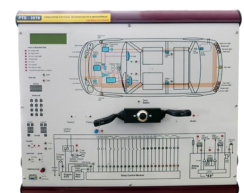


The PTS-3577 Suspension simulator provides a training platform for exploring the process, the operation and troubleshooting of a typical modern car air suspension, its subsystems, its components, its structure and other operational parameters.

The simulator includes real components and simulation components modules. The experimenting panel includes the system drawings with test points and banana sockets.

PTS-3578 Simulator

Safety Systems Simulator

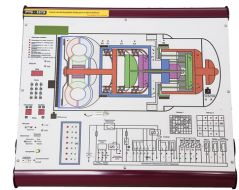


The PTS-3578 Safety Systems simulator provides an introduction to the structure, operation and troubleshooting of the safety sub system found in a modern automobile, ranging from seat belts and alarms to airbags and fuel leakage.

The simulator includes real components and simulation components modules. The experimenting panel includes the system drawings with test points and banana sockets.

PTS-3579 Simulator

Transmission Simulator



The PTS-3579 Transmission simulator provides an introduction to Automatics transmission, transmission operating programs, insertion of non-destructive faults and troubleshooting. The simulator includes real components and simulation components modules. The experimenting panel includes the system drawings with test points and banana sockets.

PT-2A Trainer

Electronic Multipoint Petrol Injection

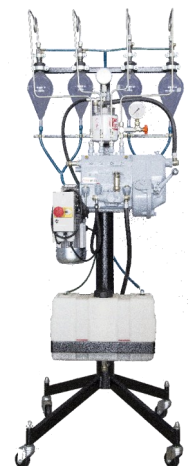
Sequential multipoint gasoline injection and ignition system



The PT-2A Electronic Multipoint Petrol Injection Trainer can be used for training in the operation and control of four-cylinder petrol engines with **sequential fuel injection and static ignition** and it is also equipped with an electronic unit included in a multiplex CAN network between the dashboard and the body computer, to minimize the wiring and ensure a high reliability.

PT-915 Demonstrator

Injection Unit Demonstrator



The PT-915 Injection Unit Demonstrator is aimed to demonstrate in real time the fuel injection system of a Diesel engine. Through an actual component and circuit system the students can see the Injection cycle. It uses actual diesel fuel.

PT-30 Trainer

Chassis Front – Wheel Drive Transversally Mounted Petrol Engine



The PT-30 Trainer is in fact a full frame Chassis with Front – Wheel Drive and Transversally Mounted Petrol Engine operating Demonstrator, offering to the students training in all the basic automotive mechanical components in a car assembly. It is an ideal demonstrator of the operation and interconnectivity of the automotive mechanical subsystems, operated by an electric motor, based on a wheeled stand.

Sectioned Auto mechanical Models

Kondle offers various types of **Sectioned Auto mechanical Models** (*Cut-Off parts*) giving in that way an opportunity to students to train in all the basic automotive mechanical components in a car assembly, such as the following:

PT-001 Steering And Suspension Model

PT-001 is a fully operational, self contained Steering and Suspension Model. It is manufactured using original components and arranged as per the original vehicle. Suitable for all manufacturers' alignment test procedures. The PT-001 comes with a power steering rack, fully operational driven by a 1.2kW electric motor, a facility to load the suspension via jacks beneath the road wheels and a complete steering column and steering wheel. The Steering and Suspension trainer offers an enhanced training resource, hands on training with real components, greater understanding for the student without the constraints of the modern motor vehicle.



Requirements and Dimensions

- 240V AC supply required for power steering pump
- Dimensions approx.: W:90 x L:150 x H:120 cm
- Weight approx.: 260 kg

PT-111 Petrol Engine Sectioned Model

The PT-111 Model is a Petrol Engine Section that offers a training experience with real components and reliable results.

The main characteristics of PT-111 are:

- Four – Stroke
- Full size sectioned model
- Hand crank operation
- Cooling system
- Carburetor
- Coil ignition
- Distributor
- Spark plug coil
- Explosion stroke simulated by small bulb lighting



Base Dimensions

- Dimensions approx.: 30 x 25 x 60 cm
- Weight approx.: 9 kg

PT-157 Hydraulic Control Clutch Model

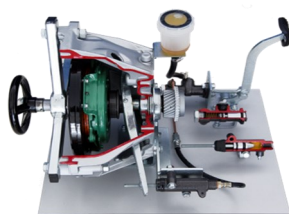
The PT-157 Model shows the **Hydraulic circuit** which is aimed to **control a diaphragm clutch**.

PT-157 also includes:

- Pump
- Cylinder
- Clutch fully sectioned

Base Dimensions

- Dimensions: 53 x 43 x 45 cm
- Weight: 27 kg



PT-101 Diesel Engine Model

The PT-101 is a full size sectioned Diesel Engine Model that offers a training experience with real components and reliable results.

The main characteristics of PT-101 are:

- Four – Stroke
- Hand crank operation
- Indirect injection
- Injection pump and injector
- Pre-combustion chamber
- Pre-heating glow plug
- Cooling system
- Distribution circuit
- During expansion phase the ignition of the fuel is simulated by small bulb lighting by a push-button



Base Dimensions

- Dimensions approx.: 25 x 25 x 50 cm
- Weight approx.: 8 kg

PT-151 Automatic Gearbox Model - Crank Operated (3 speed and reverse)

The PT-151 Model is an Automatic Gearbox - Crank Operated with 3 speed and reverse which is composed by:

- Hydraulic torque converter
- Hydraulic valves
- Epicyclic gear change
- Multi-plate clutches
- Braking system
- On stand with wheels



Hand crank operation:

- Dimensions approx.: 80 x 30 x 30 cm
- Weight approx.: 90kg

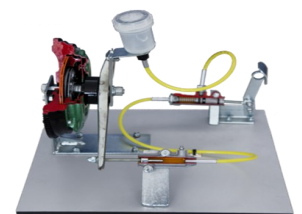


PT-157-1 Hydraulic Control Clutch Cross Model

This PT-157-1 Model shows the **hydraulic circuit controlling a diaphragm clutch**. The pump, cylinder and clutch units are fully sectioned.

Dimensions:

- Product size: 53 x 43 x 45 cm
- Weight : 16 Kg



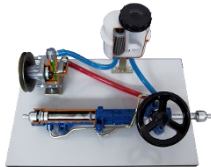
Sectioned Auto mechanical Models

PT-172 Rack Power Steering Section Model

The PT - 172 Model is a power steering hydraulic circuit provided with a rack type steering box, hydraulic pump, oil tank relevant filter and connecting pipes. All parts are carefully sectioned to show every detail. The trainer is operated by hand through a hand wheel and mounted on a base.

Dimensions:

- Product size: 63 x 43 x 42 cm
- Weight: 11 Kg



PT-214 Catalytic Silencer With Lambda Probe

The PT-214 Model shows the parts of the catalytic silencer with lambda probe.

Base Dimensions:

- Dimensions approx.: 40 x 25 x 15 cm
- Weight approx.: 15kg



PT-242 Air Compressor Cut Model

The PT - 242 Model is an air compressor which can be used for Pneumatic operations within the lab.



PT-1031 Single Body Carburetor Model

The PT-1031 Model is a Single Body Carburetor, the parts of which are sectioned to show the components consisting it. The trainer is mounted on a base.

Dimensions:

- Product size: 17 x 13 x 20 cm
- Weight: 1,5 Kg

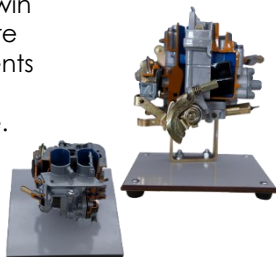


PT-1033 Vertical Twin Carburetor Model

The PT-1033 Model is a Vertical Twin Carburetor, the parts of which are sectioned to show the components consisting it. The trainer is mounted on a base.

Dimensions:

- Product size: 18 x 20 x 20 cm
- Weight: 3 kg

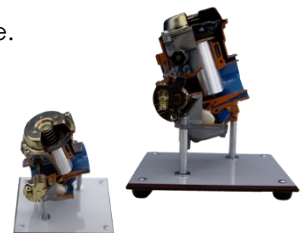


PT-1034 Vacuum Carburetor Model

The PT-1034 Model is a Vacuum Carburetor, the parts of which are sectioned to show the components consisting it. The trainer is mounted on a base.

Dimensions:

- Product size: 16 x 13 x 20 cm
- Weight: 1 kg



PT-1065 Air Conditioning Cut Model

The PT-1065 is a cutaway model of air conditioning system, showing the operation of its main parts:

- Radial piston compressor
- Condenser
- Filter
- Expansion valve
- Evaporator
- Electric fans
- High and low pressure connecting hose

Dimensions and weights (packing included) approximately:

- Dimensions: 62 x 45 x 45 cm
- Net weight: 16 kg
- Gross weight: 20 kg

