



AutoEDU

MAKING PRACTICE PERFECT

AutoEDU Automotive Training Aids

AutoEDU Products Mapped to ASE Competencies



EdTech Global 100 Cambridge Street, 14th Floor Boston, MA 02114

In 2003, **AutoEDU** started manufacturing educational automotive training aids and equipment. In those 2 decades, **AutoEDU** has become the global leader in OEM-based automotive training aids with customers in over 100 countries. In 2023, **AutoEDU** partnered with **EdTech Global** to bring the **AutoEDU** product line to North America, a region where the established players have shown limited innovation and are providing limited training aids across the emerging areas of EV (electric vehicles) and Hybrid vehicles.

AutoEDU products range from...fully operational engines with different fuel supply systems: gas (MPI, FSI, TFSI, TSI, etc.); diesel (TD, TDI, Common Rail, PD, PLD, etc.); hybrid gas/electric drive system. All are manufactured with pin-out facilities and fault simulation to assist students in the diagnostic training and to help them understand modern vehicle systems.

All **AutoEDU** training equipment is based on OEM components. The systems used in **AutoEDU** products are original, except for rare situations. The electrical signals or diagnostic procedures are simulated on working conditions just like in a real car.

This catalog maps **AutoEDU** products to the **ASE competencies** and topics covered in each **ASE area**. In this catalog, you'll see **AutoEDU** has multiple training aids available to assist both the instructor and student with each ASE topical area.

Go to www.automotivetrainingequipment.com to learn more & to request a call.



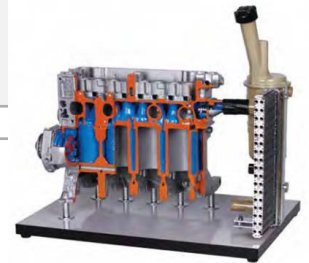
SKU# IVDB01	Gasoline DOHC engine ½ cutaway Educational Trainer	Demonstration: Engine components, alternator belt and timing belt replacement. Task: Identify engine components, alternator and timing belt replacement.
ASE Task	Description	Priority
A1.A.6	Verify engine mechanical timing.	P-1
A1.B.1	Identify cylinder head and valve train components and configurations.	P-1
A1.B.6	Inspect and replace camshaft and drive belt/chain.	P-1
A1.C.1	Identify engine block assembly components and configurations.	P-1
A1.C.2	Remove, inspect, and/or replace crankshaft vibration damper.	P-1



SKU# IVDB02	Gasoline DOHC MPI engine ½ cutaway Educational Trainer	Demonstration: Engine components, alternator belt and timing belt replacement. Task: Identify engine components, alternator and timing belt replacement.
ASE Task	Description	Priority
A1.A.6	Verify engine mechanical timing.	P-1
A1.B.1	Identify cylinder head and valve train components and configurations.	P-1
A1.B.6	Inspect and replace camshaft and drive belt/chain.	P-1
A1.C.1	Identify engine block assembly components and configurations.	P-1
A1.D.5	Inspect, replace, and/or adjust drive belts, tensioners, and pulleys; check pulley and belt alignment.	P-1



SKU# AE410401S	Engine cooling system (on base) cutaway Educational Trainer	Demonstration: Cooling system components. Task: Identify Cooling system components.
ASE Task	Description	Priority
A1.D.1	Identify lubrication and cooling system components and configurations	P-1



SKU# VIVV01	Engine for disassembling and assembling	Demonstrate different components and their function. Task: Identify and disassemble/assemble components.
ASE Task	Description	Priority
A1.A.5	Install engine covers using gaskets, seals, and sealers as required.	P-1
A1.A.6	Verify engine mechanical timing.	P-1
A1.B.1	Identify cylinder head and valve train components and configurations.	P-1
A1.B.2	Remove; inspect gasket; install cylinder head.	P-1
A1.B.3	Clean and visually inspect a cylinder head/gasket.	P-1
A1.C.1	Identify engine block assembly components and configurations.	P-1
A1.C.2	Remove, inspect, and/or replace crankshaft vibration damper.	P-1



SKU# AE411060M	Automatic Transmission Educational Trainer	Demonstration: Transmission components and their working principles. Task: Identify Transmission components.
ASE Task	Description	Priority
A2.A.2	Identify automatic transmission and transaxle components and configurations.	P-1



SKU# AE411068M	CONTINUOUSLY VARIABLE TRANSMISSION (CVT) CUTAWAY EDUCATIONAL TRAINER	Demonstration: Transmission components and their working principles. Task: Identify Transmission components.
ASE Task	Description	Priority
A2.C.1	Describe the operational characteristics of a continuously variable transmission.	P-2



SKU# AE411082M	HYBRID TRANSMISSION MG (MOTOR/GENERATOR) TOYOTA PRIUS EDUCATIONAL TRAINER	Demonstration: Transmission components and their working principles. Task: Identify Transmission components.
ASE Task	Description	Priority
A2.C.2	Describe the operational characteristics of a hybrid vehicle drive train.	P-2



SKU# GDIVV01	Gearboxes Educational Trainer for disassembling and assembling	Task: Identify Transmission components, overhaul automatic transmission.
ASE Task	Description	Priority
A2.C.6	Disassemble, clean, and inspect transmission/transaxle.	P-2
A2.C.7	Inspect, measure, clean, and replace valve body.	P-2
A2.C.8	Inspect servo and accumulator bores, pistons, seals, pins, springs, and retainers.	P-2
A2.C.9	Assemble transmission/transaxle.	P-2
A2.C.10	Inspect, measure, and reseal oil pump assembly and components.	P-2
A2.C.11	Measure transmission/transaxle end play and/or preload; determine needed action.	P-2
A2.C.12	Inspect, measure, and/or replace thrust washers and bearings.	P-2
A2.C.13	Inspect oil delivery circuits.	P-2
A2.C.14	Inspect bushings; determine needed action.	P-2
A2.C.15	Inspect and measure planetary gear assembly components.	P-2
A2.C.16	Inspect case bores, passages, bushings, vents, and mating surfaces.	P-2
A2.C.17	Diagnose and inspect transaxle drive, link chains, sprockets, gears, bearings, and bushings.	P-2
A2.C.18	Inspect measure, repair, adjust or replace transaxle final drive components.	P-2
A2.C.19	Inspect clutch drum, piston, check-balls, springs, retainers, seals, friction plates, pressure plates, & bands.	P-2
A2.C.20	Measure clutch pack clearance; determine needed action.	P-2
A2.C.21	Air test operation of clutch and servo assemblies.	P-2
A2.C.22	Inspect one-way clutches, races, rollers, sprags, springs, cages, retainers.	P-2



SKU# IDSS01	Membrane spring clutch cutaway functional Educational Trainer	Demonstration: clutch components and their working principles. Task: Identify clutch components.
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ASE Task	Description	Priority
A3.A.2	Identify manual drive train and axles components and configurations.	P-1

SKU# AE41100S	Hydraulic Control Clutch Cutaway Educational Trainer	Demonstration: hydraulic operated clutch components and their working principles. Task: Identify hydraulic operated clutch components.
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ASE Task	Description	Priority
A3.A.2	Identify manual drive train and axles components and configurations.	P-1

SKU# AE411005M	GEARBOX cutaway Educational Trainer	Demonstration: Transmission components and their working principles. Task: Identify Transmission components, transmission working principles.
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ASE Task	Description	Priority
A3.A.2	Identify manual drive train and axles components and configurations.	P-1

SKU# AE410990M	Gearbox 5 Forward Speeds + Reverse Cutaway Educational Trainer	Demonstration: Transmission components and their working principles. Task: Identify Transmission components, transmission working principles.
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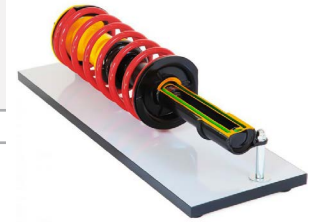
ASE Task	Description	Priority
A3.A.2	Identify manual drive train and axles components and configurations.	P-1

SKU# AE411200M	Rear-axle with differential (on stand with wheels) – manual Educational Trainer	Demonstration: Final drive components and their working principles. Task: Identify Final drive components and working principles.
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ASE Task	Description	Priority
A3.A.2	Identify manual drive train and axles components and configurations.	P-1

SKU#	HYRDAULIC SHOCK ABSORBER CUTAWAY EDUCATIONAL TRAINER	Hydraulic shock absorber/spring components and their working principles
ASE Task	Description	Priority.
AE410636		
IV.A.2	Identify suspension and steering system components and configurations.	P-1



SKU#	GAS SHOCK ABSORBER CUTAWAY EDUCATIONAL TRAINER	Hydraulic shock absorber components and their working principles.
ASE Task	Description	Priority
AE410638		
A4.A.2	Identify suspension and steering system components and configurations.	P-1



SKU#	WHEEL ALIGNMENT TRAINING EDUCATIONAL TRAINER	Demonstration: Suspension components and their working principles. Task: Wheel alignment.
ASE Task	Description	Priority
MSVAZ1		
A4.A.2	Identify suspension and steering system components and configurations.	P-1
A4.E.1	Perform pre-alignment inspection; measure vehicle ride height; determine needed action.	P-1
A4.E.2	Describe four-wheel alignment angles (camber, caster, and toe) and effects on vehicle handling\tire wear.	P-1
A4.E.3	Prepare vehicle for wheel alignment on alignment machine; perform four-wheel alignment.	P-1
A4.E.4	Check toe-out-on-turns (turning radius); determine needed action.	P-1
A4.E.5	Check steering axis inclination (SAI) and included angle; determine needed action.	P-1
A4.E.6	Check rear wheel thrust angle; determine needed action.	P-1
A4.E.7	Check for front wheel setback; determine needed action.	P-1
A4.E.10	Diagnose vehicle wander, drift, pull, hard steering, bump steer, memory steer, torque steer, and steering return concerns.	P-1



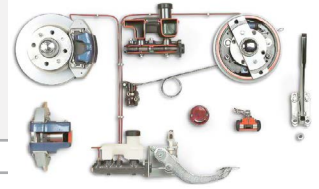
SKU# AE410778E	ELECTRIC POWER-ASSISTED STEERING (EPS) SYSTEM WITH SUSPENSION EDUCATIONAL TRAINER	Demonstration: Electric power steering system components and their working principles. Task: Identify components, measurements, etc.
ASE Task	Description	Priority
A4.A.2	Identify suspension and steering system components and configurations.	P-1



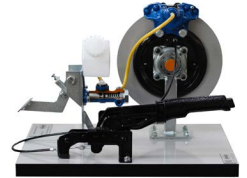
SKU# MSPPS1	TRUCK AIR SUSPENSION EDUCATIONAL TRAINER	Demonstration: Air ride system components and their working principles. Task: Identify components, measurements, etc.
ASE Task	Description	Priority
A4.D.3	Describe the function of electronically controlled suspension and steering systems and components.	P-1



SKU# AE412050M	HYDRAULIC DUAL CIRCUIT BRAKE WITH SERVO BRAKE TRAINING UNIT EDUCATIONAL TRAINER	Demonstration: Hydraulic brake system components and their working principles. Task: Identify brake system components.
ASE Task	Description	Priority
A5.A.2	Identify brake system components and configurations.	P-1
A5.B.3	Check master cylinder for internal/external leaks and proper operation; determine needed action.	P-1



SKU# AE412030M	DISC AND DRUM BRAKE CUTAWAY EDUCATIONAL TRAINER	Demonstration: Hydraulic disc (hand) brake system components and their working principles. Task: Identify brake system components.
ASE Task	Description	Priority
A5.A.2	Identify brake system components and configurations.	P-1
A5.B.2	Measure brake pedal height, travel, and free play.	P-1



SKU# MSEPS01	ELECTROMECHANICAL PARKING BRAKE EPB STAND EDUCATIONAL TRAINER	Demonstration: Electromechanical hand brake system components and their working principles. Task: Identify electromechanical hand brake system components.
ASE Task	Description	Priority
A5.A.2	Identify brake system components and configurations.	P-1
A5.D.9	Retract and re-adjust caliper piston on an integrated parking brake system.	P-1
A5.F.3	Check parking brake operation (including electric parking brakes).	P-2



SKU# MSSS01	BRAKE RIGS EDUCATIONAL TRAINER	Demonstration: Hydraulic brake system components and their working principles. Task: Identify brake system components.
ASE Task	Description	Priority
A5.A.2	Identify brake system components and configurations.	P-1
A5.A.3	Retrieve and record DTCs, OBD monitor status, and freeze frame data; clear codes and data when directed.	P-1
A5.B.1	Diagnose pressure concerns in the brake system using hydraulic principles (Pascal's Law).	P-1
A5.B.2	Measure brake pedal height, travel, and free play.	P-1
A5.B.3	Check master cylinder for internal/external leaks and proper operation; determine needed action.	P-1
A5.B.4	Inspect brake lines, flexible hoses, and fittings for leaks, etc.	P-1
A5.B.6	Identify components of hydraulic brake warning light system.	P-1
A5.B.11	Replace brake lines, hoses, fittings, and supports.	P-2
A5.B.12	Fabricate brake lines using proper material and flaring procedures.	P-2
A5.E.3	Inspect vacuum-type power booster unit for leaks.	P-2



SKU#
 AE410070M
 AE410071M

STARTER MOTOR FOR CARS CUTAWAY EDUCATIONAL TRAINER

Demonstration: Starter motor components and their working principles.
Task: Identify starter motor components.



ASE Task	Description	Priority
A6.A.2	Identify electrical/electronic system components and configurations.	P-1

SKU#
 AE410040S
 AE410041

12 VOLT BATTERY CUTAWAY EDUCATIONAL TRAINER

Demonstration: 12V battery components and their working principles.
Task: Identify 12V battery components.



ASE Task	Description	Priority
A6.A.2	Identify electrical/electronic system components and configurations.	P-1

SKU#
 AE41008M

Alternator SINGLE-FLOW COOLING CUTAWAY EDUCATIONAL TRAINER

Demonstration: Alternator components and their working principles.
Task: Identify Alternator components.



ASE Task	Description	Priority
A6.A.2	Identify electrical/electronic system components and configurations.	P-1

SKU#
 MMSG01

AUTOMOTIVE CHARGING SYSTEM EDUCATIONAL TRAINER

Demonstration: 12V charging system components and their working principles.
Task: Identify 12V charging system components, perform measurements.



ASE Task	Description	Priority
A6.A.2	Identify electrical/electronic system components and configurations.	P-1
A6.D.4	Perform charging circuit voltage drop tests; determine needed action.	P-1

SKU#	LIGHTING EDUCATIONAL TRAINER	Demonstration: Automotive lighting system components and their working principles. Task: Identify automotive lighting components, perform measurements.
ASE Task	Description	Priority
MSAS02		
A6.A.2	Identify electrical/electronic system components and configurations.	P-1
A6.A.3	Retrieve and record DTCs, OBD monitor status, and freeze frame data; clear codes and data when directed.	P-1
A6.A.5	Demonstrate proper use of a digital multimeter.	P-1
A6.A.6	Demonstrate knowledge of the causes and effects from shorts, grounds, opens, and resistance problems in electrical/electronic circuits.	P-1
A6.A.9	Use wiring diagrams during the diagnosis of electrical/electronic circuit problems.	P-1
A6.E.1	Inspect interior and exterior lamps and sockets including headlights and auxiliary lights.	P-1
A6.E.3	Diagnose the causes of brighter-than-normal, intermittent, dim, or no light operation.	P-1
A6.F.1	Verify operation of instrument panel gauges and warning/indicator lights.	P-1
A6.F.2	Inspect and test gauges and gauge sending units for causes of abnormal readings.	P-1
A6.F.3	Diagnose the causes of incorrect operation of warning devices and other driver information systems.	P-1



SKU#	CAN BUS EDUCATIONAL TRAINER	Demonstration: Automotive CAN system components and their working principles. Task: Identify automotive CAN system components, learn working principles, perform measurements.
ASE Task	Description	Priority
MSCAN01		
A6.A.2	Identify electrical/electronic system components and configurations.	P-1
A6.A.3	Retrieve and record DTCs, OBD monitor status, and freeze frame data; clear codes and data when directed.	P-1
A6.A.5	Demonstrate proper use of a digital multimeter.	P-1
A6.A.6	Demonstrate knowledge of the causes and effects from shorts, grounds, opens, and resistance problems in electrical/electronic circuits.	P-1
A6.A.9	Use wiring diagrams during the diagnosis of electrical/electronic circuit problems.	P-1
A6.G.1	Diagnose vehicle comfort, convenience, access, safety, and related systems operation.	P-1
A6.G.3	Diagnose operation of security/anti-theft systems and related circuits (such as: theft deterrent, door locks, remote keyless entry, remote start, and starter/fuel disable).	P-1
A6.G.9	Diagnose body electronic systems circuits using a scan tool; check for module communication errors.	P-1



SKU#
 MSSRS1

 SRS BOSCH AB 8.4
 (AIRBAG)
 MOKOMASIS
 STENDAS

Demonstration: Airbag system components and their working principles.
Task: Identify airbag system components, learn working principles, perform measurements.



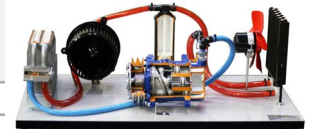
ASE Task	Description	Priority
A6.A.2	Identify electrical/electronic system components and configurations.	P-1
A6.G.4	Describe disabling and enabling procedures for supplemental restraint system (SRS).	P-1
A6.A.5	Demonstrate proper use of a digital multimeter.	P-1
A6.A.6	Demonstrate knowledge of the causes and effects from shorts, grounds, opens, and resistance problems in electrical/electronic circuits.	P-1
A6.A.9	Use wiring diagrams during the diagnosis of electrical/electronic circuit problems.	P-1

A7-Heating & Air Conditioning

 SKU#
 AE410650M

 AIR CONDITIONING
 SYSTEM (ON BASE)-
 MANUAL
 EDUCATIONAL TRAINER

Demonstration: AC system components and their working principles.
Task: Identify AC system components.



ASE Task	Description	Priority
A7.A.2	Identify heating, ventilation, and air conditioning (HVAC) components and configurations.	P-1

SKU#
MSC02
(MSC04-
R1234YF-D/B)

**DUAL ZONE AIR
CONDITIONING AND-
CLIMATE CONTROL
EDUCATIONAL TRAINER
WITH R134a (R 1234yf)**

Demonstration: Dual zone AC system components and their working principles.
Task: Identify Dual zone AC system components, perform Diagnostics.



ASE Task	Description	Priority
A7.A.3	Retrieve and record DTCs, OBD monitor status, and freeze frame data; clear codes and data when directed.	P-1
A7.A.4	Perform A/C system performance test; interpret results; determine needed action.	P-1
A7.A.5	Identify abnormal operating noises in the A/C system; determine needed action.	P-2
A7.A.6	Leak test A/C system; determine needed action.	P-1
A7.A.7	Identify and interpret heating and air conditioning problems; determine needed action.	P-1
A7.A.8	Identify refrigerant type; test for sealant; select and connect proper gauge set/test equipment; record temperature and pressure readings.	P-1
A7.A.9	Inspect condition/quantity of refrigerant oil removed from A/C system; determine needed action.	P-2
A7.A.10	Determine recommended oil and oil capacity for system application and component(s) replacement.	P-1
A7.B.9	Diagnose A/C system conditions that cause the protection devices (pressure, thermal, and/or control module) to interrupt system operation; determine needed action.	P-1
A7.C.1	Inspect engine cooling and heater systems hoses and pipes; determine needed action.	P-1
A7.C.2	Inspect and test heater control valve(s); determine needed action.	P-2
A7.C.3	Diagnose temperature control problems in the HVAC system related to the engine cooling system, including electric heating; determine needed action.	P-2
A7.C.4	Determine procedure to remove, inspect, reinstall, and/or replace heater core; properly refill system.	P-2
A7.D.1	Inspect HVAC system ducts, doors, hoses, cabin filters, and outlets; determine needed action.	P-1
A7.D.3	Inspect and test HVAC system blower motors, resistors, switches, relays, wiring, and protection devices; determine needed action.	P-1
A7.D.4	Diagnose A/C compressor control systems; determine needed action.	P-1
A7.D.5	Diagnose malfunctions in the vacuum, mechanical, and/or electrical components and controls of the HVAC system; determine needed action.	P-2
A7.E.1	Demonstrate awareness of the need to recover, recycle, and handle refrigerants using proper equipment and procedures.	P-1
A7.E.2	Use and maintain refrigerant handling equipment according to equipment manufacturer's standards.	P-1
A7.E.3	Identify A/C system refrigerant; test for sealants; recover, evacuate, and charge A/C system; add refrigerant oil as required.	P-1

SKU# MVMPI02	EDUCATIONAL GAS ENGINE TRAINER WITH MULTIPOINT INJECTION SYSTEM MPI EURO 4-5	Demonstration: MPI system components and their working principles. Task: Identify MPI system components, learn working principles, perform measurements, perform diagnostics.
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ASE Task	Description	Priority
A8.A.1	Research vehicle service information such as fluid type, vehicle service history, service precautions, technical service bulletins, and recalls.	P-1
A8.A.2	Retrieve and record DTCs, OBD monitor status, and freeze frame data; clear codes and data when directed.	P-1
A8.A.3	Verify proper engine cooling system operation; determine needed action.	P-1
A8.A.5	Identify and interpret engine performance concerns; determine needed action.	P-1
A8.A.9	Perform cylinder power balance test; determine needed action.	P-1
A8.A.10	Perform cylinder cranking and running compression tests; determine needed action.	P-1
A8.B.1	Identify computerized control system components and configurations.	P-1
A8.B.2	Access and use service information to perform step-by-step (troubleshooting) diagnosis.	P-1
A8.B.3	Perform active tests of actuators using a scan tool; determine needed action.	P-1
A8.B.4	Describe the use of OBD monitors for repair verification.	P-1
A8.B.5	Inspect and test computerized engine control system sensors, powertrain/engine control module (PCM/ECM), actuators, and circuits using a graphing multimeter (GMM), digital storage oscilloscope (DSO), and/or scan tool.	P-1
A8.B.6	Describe the process for reprogramming or recalibrating the powertrain/engine control module (PCM/ECM).	P-1
A8.B.7	Diagnose the causes of emissions or driveability concerns with stored or active diagnostic trouble codes (DTC); obtain, graph, and interpret scan tool data.	P-1
A8.B.8	Diagnose emissions or driveability concerns without stored or active diagnostic trouble codes; determine needed action.	P-1
A8.B.9	Diagnose driveability and emissions problems resulting from malfunctions of interrelated systems (cruise control, security alarms, suspension controls, traction controls, HVAC, automatic transmissions, non-OEM installed accessories, or similar systems); determine needed action.	P-2
A8.C.3	Diagnose ignition system related problems such as no-starting, hard starting, engine misfire, poor driveability, spark knock, power loss, poor mileage, and emissions concerns; determine needed action.	P-1
A8.C.4	Inspect and test crankshaft and camshaft position sensor(s); determine needed action.	P-1
A8.C.5	Inspect, test, and/or replace ignition control module and/or powertrain/engine control module; reprogram/initialize as needed.	P-2
A8.E.1	Identify emission control system components and configurations.	P-1
A8.E.2	Inspect, test, service, and/or replace positive crankcase ventilation (PCV) filter/breather, valve, tubes, orifices, and hoses; determine needed action.	P-2
A8.E.6	Diagnose emission and driveability concerns caused by catalytic converter system; determine needed action.	P-1
A8.E.8	Interpret diagnostic trouble codes (DTCs) and scan tool data related to the emissions control systems; determine needed action.	P-1

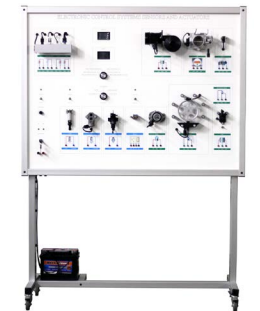
**SKU#
MVTSI3**
**EDUCATIONAL GAS
ENGINE TRAINER
WITH DIRECT INJECTION
SYSTEM (TSI) EURO 6**
Demonstration: TSI system components and their working principles.
Task: Identify TSI system components, learn working principles, perform measurements, perform diagnostics.


ASE Task	Description	Priority
A8.A.1	Research vehicle service information such as fluid type, vehicle service history, service precautions, technical service bulletins, and recalls.	P-1
A8.A.2	Retrieve and record DTCs, OBD monitor status, and freeze frame data; clear codes and data when directed.	P-1
A8.A.3	Verify proper engine cooling system operation; determine needed action.	P-1
A8.A.5	Identify and interpret engine performance concerns; determine needed action.	P-1
A8.A.9	Perform cylinder power balance test; determine needed action.	P-1
A8.A.10	Perform cylinder cranking and running compression tests; determine needed action.	P-1
A8.B.1	Identify computerized control system components and configurations.	P-1
A8.B.2	Access and use service information to perform step-by-step (troubleshooting) diagnosis.	P-1
A8.B.3	Perform active tests of actuators using a scan tool; determine needed action.	P-1
A8.B.4	Describe the use of OBD monitors for repair verification.	P-1
A8.B.5	Inspect and test computerized engine control system sensors, powertrain/engine control module (PCM/ECM), actuators, and circuits using a graphing multimeter (GMM), digital storage oscilloscope (DSO), and/or scan tool.	P-1
A8.B.6	Describe the process for reprogramming or recalibrating the powertrain/engine control module (PCM/ECM).	P-1
A8.B.7	Diagnose the causes of emissions or driveability concerns with stored or active diagnostic trouble codes (DTC); obtain, graph, and interpret scan tool data.	P-1
A8.B.8	Diagnose emissions or driveability concerns without stored or active diagnostic trouble codes; determine needed action.	P-1
A8.B.9	Diagnose driveability and emissions problems resulting from malfunctions of interrelated systems (cruise control, security alarms, suspension controls, traction controls, HVAC, automatic transmissions, non-OEM installed accessories, or similar systems); determine needed action.	P-2
A8.C.3	Diagnose ignition system related problems such as no-starting, hard starting, engine misfire, poor driveability, spark knock, power loss, poor mileage, and emissions concerns; determine needed action.	P-1
A8.C.4	Inspect and test crankshaft and camshaft position sensor(s); determine needed action.	P-1
A8.C.5	Inspect, test, and/or replace ignition control module and/or powertrain/engine control module; reprogram/initialize as needed.	P-2
A8.E.1	Identify emission control system components and configurations.	P-1
A8.E.2	Inspect, test, service, and/or replace positive crankcase ventilation (PCV) filter/breather, valve, tubes, orifices, and hoses; determine needed action.	P-2
A8.E.6	Diagnose emission and driveability concerns caused by catalytic converter system; determine needed action.	P-1
A8.E.8	Interpret diagnostic trouble codes (DTCs) and scan tool data related to the emissions control systems; determine needed action.	P-1

SKU#	IGNITION SYSTEM EDUCATIONAL TRAINER	Demonstration: 3 different ignition systems components and their working principles. Task: Identify 3 different ignition systems components, perform measurements.
ASE Task	Description	Priority
MSUS01		
A8.B.5	Inspect and test computerized engine control system sensors, powertrain/engine control module (PCM/ECM), actuators, and circuits using a graphing multimeter (GMM), digital storage oscilloscope (DSO), and/or scan tool.	P-1
A8.C.1	Identify ignition system components and configurations.	P-1



SKU#	SENSORS AND ACTUATORS EDUCATION TRAINER	Demonstration: Different sensor & actuators and their working principles. Task: Identify different sensor & actuators, perform measurements.
ASE Task	Description	Priority
MSD01		
A8.B.5	Inspect and test computerized engine control system sensors, powertrain/engine control module (PCM/ECM), actuators, and circuits using a graphing multimeter (GMM), digital storage oscilloscope (DSO), and/or scan tool.	P-1



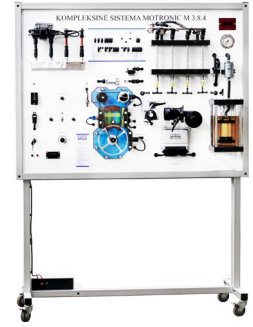
SKU#	ENGINE CONTROL SYSTEM BOSCH MOTRONIC MED 7.5.10 (FSI) EDUCATIONAL TRAINER	Demonstration: FSI sensor & actuators and their working principles within the FSI system. Task: Identify different sensor & actuators, perform measurements.
ASE Task	Description	Priority
MSFSI01		
A8.B.1	Identify computerized control system components and configurations.	P-1
A8.B.2	Access and use service information to perform step-by-step (troubleshooting) diagnosis.	P-1
A8.B.3	Perform active tests of actuators using a scan tool; determine needed action.	P-1
A8.B.4	Describe the use of OBD monitors for repair verification.	P-1
A8.B.5	Inspect and test computerized engine control system sensors, powertrain/engine control module (PCM/ECM), actuators, and circuits using a graphing multimeter (GMM), digital storage oscilloscope (DSO), and/or scan tool.	P-1
A8.B.6	Describe the process for reprogramming or recalibrating the powertrain/engine control module (PCM/ECM).	P-1
A8.B.7	Diagnose the causes of emissions or driveability concerns with stored or active diagnostic trouble codes (DTC); obtain, graph, and interpret scan tool data.	P-1
A8.B.8	Diagnose emissions or driveability concerns without stored or active diagnostic trouble codes; determine needed action.	P-1
A8.B.9	Diagnose driveability and emissions problems resulting from malfunctions of interrelated systems (cruise control, security alarms, suspension controls, traction controls, HVAC, automatic transmissions, non-OEM installed accessories, or similar systems); determine needed action.	P-2
A8.C.3	Diagnose ignition system related problems such as no-starting, hard starting, engine misfire, poor driveability, spark knock, power loss, poor mileage, and emissions concerns; determine needed action.	P-1
A8.C.4	Inspect and test crankshaft and camshaft position sensor(s); determine needed action.	P-1
A8.C.5	Inspect, test, and/or replace ignition control module and/or powertrain/engine control module; reprogram/initialize as needed.	P-2



SKU#
MSMPI01

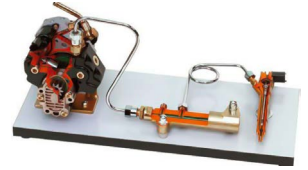
ENGINE CONTROL SYSTEM MOTRONIC M 3.8.X (MPI) EDUCATIONAL EDUCATIONAL TRAINER

Demonstration: MPI sensor & actuators and their working principles within the MPI system.
Task: Identify different sensor & actuators, perform measurements.



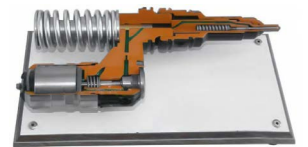
ASE Task	Description	Priority
A8.B.1	Identify computerized control system components and configurations.	P-1
A8.B.2	Access and use service information to perform step-by-step (troubleshooting) diagnosis.	P-1
A8.B.3	Perform active tests of actuators using a scan tool; determine needed action.	P-1
A8.B.4	Describe the use of OBD monitors for repair verification.	P-1
A8.B.5	Inspect and test computerized engine control system sensors, powertrain/engine control module (PCM/ECM), actuators, and circuits using a graphing multimeter (GMM), digital storage oscilloscope (DSO), and/or scan tool.	P-1
A8.B.6	Describe the process for reprogramming or recalibrating the powertrain/engine control module (PCM/ECM).	P-1
A8.B.7	Diagnose the causes of emissions or driveability concerns with stored or active diagnostic trouble codes (DTC); obtain, graph, and interpret scan tool data.	P-1
A8.B.8	Diagnose emissions or driveability concerns without stored or active diagnostic trouble codes; determine needed action.	P-1
A8.B.9	Diagnose driveability and emissions problems resulting from malfunctions of interrelated systems (cruise control, security alarms, suspension controls, traction controls, HVAC, automatic transmissions, non-OEM installed accessories, or similar systems); determine needed action.	P-2
A8.C.3	Diagnose ignition system related problems such as no-starting, hard starting, engine misfire, poor driveability, spark knock, power loss, poor mileage, and emissions concerns; determine needed action.	P-1
A8.C.4	Inspect and test crankshaft and camshaft position sensor(s); determine needed action.	P-1
A8.C.5	Inspect, test, and/or replace ignition control module and/or powertrain/engine control module; reprogram/initialize as needed.	P-2

SKU# AE410300M	DIESEL COMMON-RAIL (ON BASE) – MANUAL EDUCATIONAL TRAINER	Demonstration: Diesel common rail system components and their working principles. Task: Identify CRD components.
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ASE Task	Description	Priority
No Tasks available.		

SKU# AE410110S	INJECTOR PUMP CUTAWAY EDUCATIONAL TRAINER	Demonstration: Diesel Injector pump and their working principles. Task: Identify PD components.
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ASE Task	Description	Priority
No Tasks available.		

SKU# MVCR4	EDUCATIONAL DIESEL ENGINE TRAINER WITH CR (COMMON RAIL) EURO 6	Demonstration: Diesel system components and their working principles. Task: Identify Diesel system components, learn working principles, perform measurements, perform diagnostics.
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ASE Task	Description	Priority
A9.A.3	Perform scan tool check and visual inspection for physical damage and missing, modified, or tampered components; determine needed actions.	
A9.A.4	Check and record electronic diagnostic codes, freeze frame and/or operational data; monitor scan tool data; determine further diagnosis.	
A9.A.5	Clear diagnostic trouble codes (DTCs) and verify the repair. calibration settings, injector calibration codes; perform control module re-learn procedures as needed.	
A9.E.5	Perform exhaust back pressure and temperature tests; determine needed actions. exhaust aftertreatment systems, electronic stability control, or non-OEM installed accessories).	
A9.F.12	Connect diagnostic scan tool to vehicle/engine; access, verify and update software calibration settings, injector calibration codes; perform control module re-learn procedures as needed.	
A9.F.13	Use a diagnostic scan tool to inspect and test electronic engine control system, sensors, actuators, electronic control modules, and circuits; determine further diagnosis	
A9.F.14	Measure and interpret voltage, voltage drop, amperage, and resistance readings using a digital multimeter (DMM) or appropriate test equipment.	
A9.F.15	Diagnose engine problems resulting from failures of interrelated systems (for example: cruise control, security alarms/theft deterrent, transmission controls, exhaust aftertreatment systems, electronic stability control, or non-OEM installed accessories).	

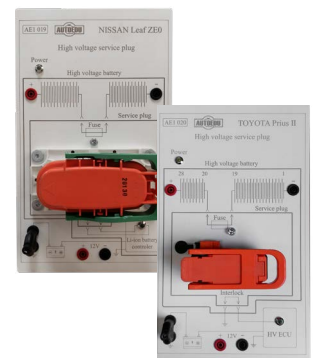
SKU# MSEV02	Electric vehicle training stand	Demonstration: EV system components and their working principles. Task: Identify EV components, perform procedures and tests.
ASE Task	Description	Priority
L3-A1	Perform high voltage disconnect procedure; reconnect/enable high voltage system.	P-1
L3-A4	Retrieve and diagnose DTCs; determine needed repairs.	P-1
L3-A8	Test, diagnose and repair high voltage leaks/loss of isolation.	P-1
L3-A9	Test, diagnose and repair high voltage battery pack heating and cooling systems.	P-1
L3-A10	Test, diagnose, repair or replace high voltage battery pack internal components.	P-1
L3-A11	Test and diagnose charging problems when using electric vehicle supply equipment (EVSE).	P-1
L3-D6	Identify procedures necessary to establish the proper vehicle operational power mode during service (OFF, ACCESSORY, POWER ON, READY TO DRIVE)."	P-1
L3-D15	Diagnose, locate and safely disable/enable safety interlocks.	P-1
L3-D18	Test high voltage cable integrity and loss of isolation.	P-1



SKU# HYBBAT01	High Voltage Battery Educational Trainer	Demonstration: EV HV Battery components and their working principles. Task: Identify EV HV Battery components, perform procedures and tests.
ASE Task	Description	Priority
L3-A1	Perform high voltage disconnect procedure; reconnect/enable high voltage system.	P-1
L3-A10	Test, diagnose, repair or replace high voltage battery pack internal components.	P-1



SKU# MSAE1020 & MSAE1019	High Voltage Source Safe Disconnection (common rail), EURO 6 Educational Trainer	Demonstration: Safely disable/enable safety interlocks. Task: Safely disable/enable safety interlocks.
ASE Task	Description	Priority
L3-A1	Perform high voltage disconnect procedure; reconnect/enable high voltage system.	P-1



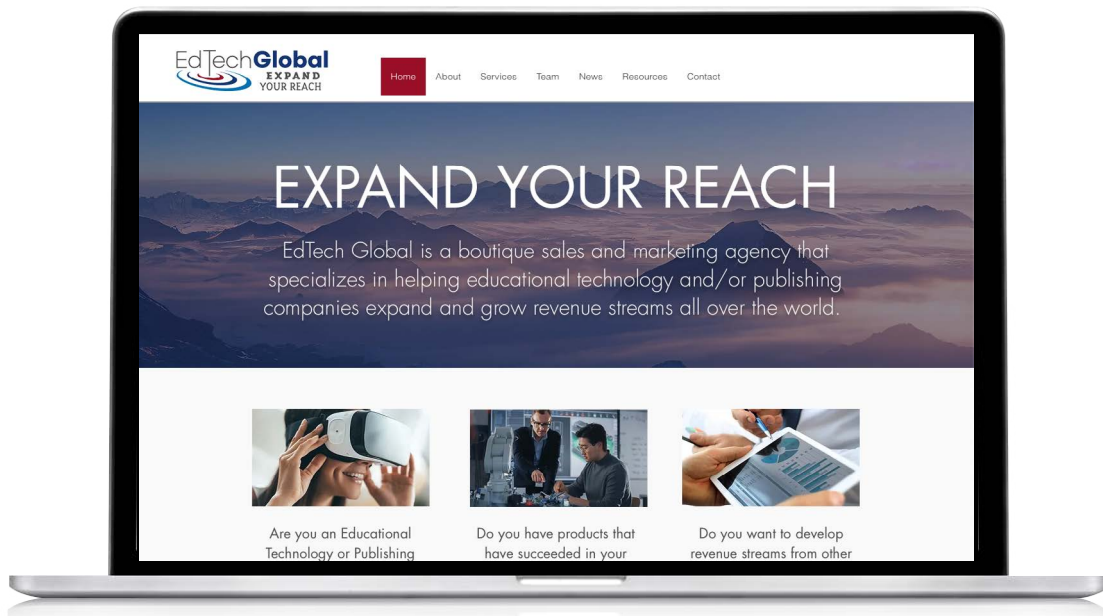
	ASE Topic	Trainer	AUTOEDU Reference	Trainer	AUTOEDU Reference	Trainer	AUTOEDU Reference	
A1- Engine Repair	Gas DOHC engine ½ cut-away Educational Trainer		IVDB01	Gas DOHC MPI engine ½ cut-away Educational Trainer		IVDB02	Engine cooling system (on base) cutaway Educational Trainer	AE410401S
A2-Automatic Transmission/ Transaxle	Automatic Transmission Educational Trainer		AE411060M	Continuously Variable Transmission (CVT) Cutaway Educational Trainer		AE411068M	Hybrid Transmission MG Toyota Prius educational trainer	AE411082M
A3-Manual Drive Train & Axles	Membrane spring clutch cutaway functional Educational Trainer		IDSS01	Hydraulic Control Clutch Cutaway Educational Trainer		AE411100S	Gearbox cutaway Educational Trainer	AE411005M
A4- Suspension & Steering	Hydraulic shock absorber cut-away Educational Trainer		AE410636	Gas shock absorber cut-away Educational Trainer		AE410638	Wheel alignment training Educational Trainer	MSVAZ01
A5- Brakes	Hydraulic Dual Circuit Brake with Servo Brake training unit Educational Trainer		AE412050M	Disc and drum brake cutaway Educational Trainer		AE412030M	Electromechanical parking brake EPB stand Educational Trainer	MSEPS01
A6-Electrical/ Electronic Systems	Starter motor for cars cutaway Educational Trainer		AE410070M AE410071M	12 Volt Battery cut-away Educational Trainer lead/AGM		AE410040S AE410041	Alternator single flow cooling cut-away Educational Trainer	AE410080M
A7-Heating & Air Conditioning	Air Conditioning System (On Base) – Manual Educational Trainer		AE410650M	Dual-zone Air conditioning and climate control Educational Trainer with R 1234yf GAS		MSC04- R1234YF- D/B	Air Conditioning And Climate Control Educational Trainer (R134a)	MSC02
A8- Engine Performance	Educational gas engine trainer with multipoint injection system MPI EURO 4-5		MVM- PI02-TOY	Educational gas engine trainer with direct injection system (TSI) EURO 6		MVTSI3	Ignition System Educational Trainer	MSUS01
A9- Light Vehicle Diesel Engines	Diesel common rail (on base) – manual Educational Trainer		AE410300M	Diesel injector pump cutaway Educational Trainer		AE410110S	educational Truck Diesel engine with CR Ad-Blue system	MVCR4
L3-Light Duty Hybrid/Electric Vehicle Specialist	Electric vehicle training stand		MSEV02	CP3 BOSCH HIGH PRESSURE PUMP cutaway model (on the base)		AE410106M	Educational Diesel engine with CR (common rail), EURO 6	MVCR04



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