



Truck and Heavy Equipment

Worldskills proud supporter

OFFERING YOU INTUITIVE SOLUTIONS

For more than 50 years, ConsuLab has devoted our business plan to offering intuitive solutions to educators. This is more than just a catchphrase or a marketing line; this is at the core of ConsuLab's beliefs. Since our beginnings in 1969, ConsuLab has specialized in manufacturing and distributing high-quality training equipment to help you teach ever-evolving technology.

Over this time, we have developed a reputation for quality and innovation in the fields of transportation technology, truck and heavy equipment and many programs dealing with electricity, electronics, hydraulics and pneumatics. We do not build simulators, we build training equipment that can be used for years. All of our educational training aids are built to better utilize instructors' time, to help students meet the requirements for their specific program and to prepare them to become a productive and successful part of the workforce.

We are devoted to the technical education industry. We employ former educators, we design and build training aids with educators in mind, and we take the concept of helping you teach technology very seriously by offering intuitive solutions through highly engineered and well-crafted training aids.

We partner with many organizations in the industry because we are passionate about developing the highest quality truck and heavy equipment technicians and assisting you in helping shape the future of the trades.

We thank you for this opportunity and encourage you to take time to look through this catalog to find intuitive solutions to today's transportation technology.



Kevin Boden, President

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HV-125-BWP_053334

Air brake driving simulator

The industry's first air brake driving simulator.

Imagine driving down the road with your class of students while demonstrating ABS, ATC and ESC functions on a complete air brake system with all students viewing the scan data and wheel speeds!

Take your class on a road test!

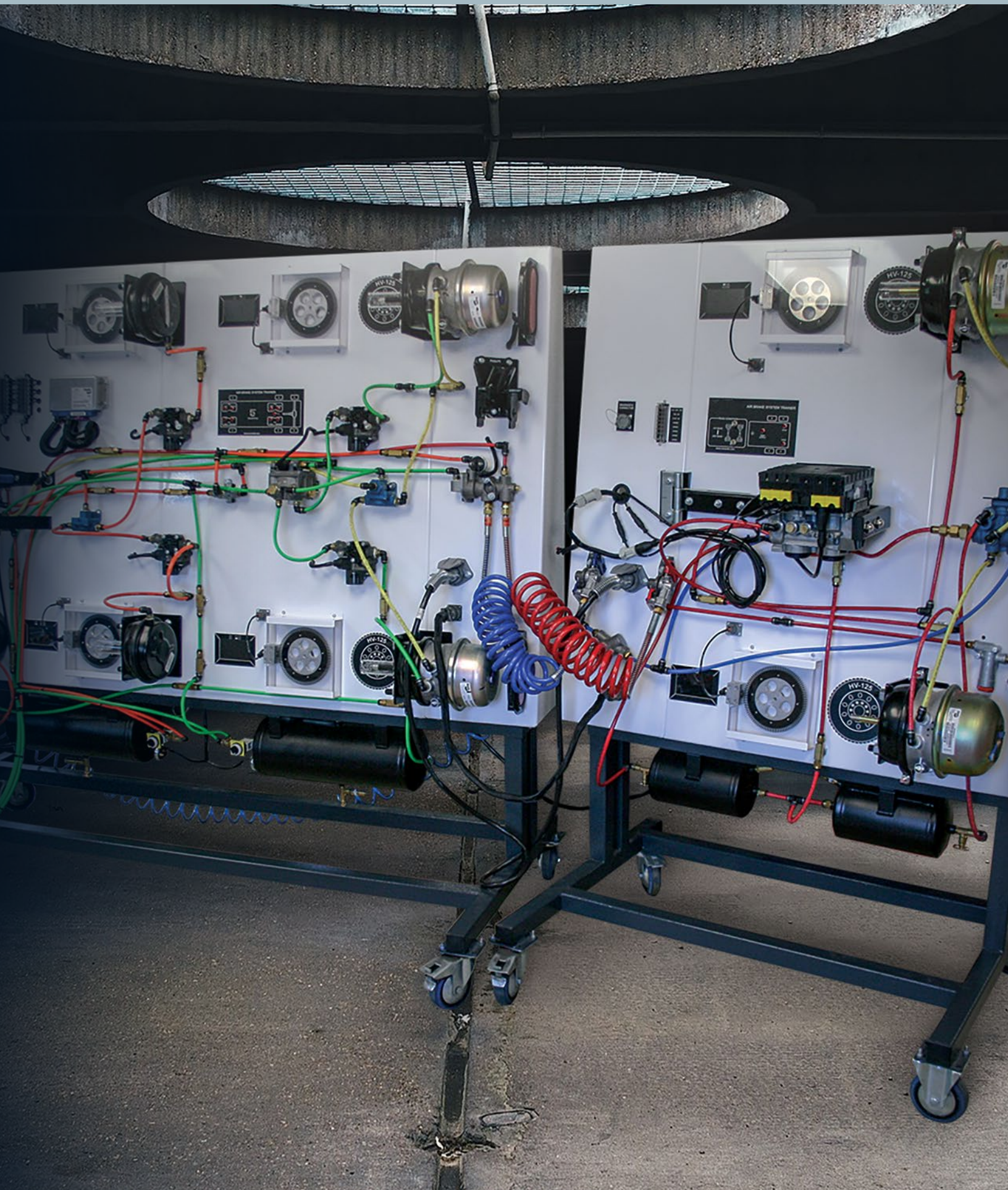
- Teach basic air brake inspections.
- Liberate yourself from lengthy setup times and exercise development.
- Be setup to teach in 5 minutes.
- Challenge your students with basic, intermediate, and advanced exercises.
- 30+ pneumatic and electrical faults.
- Hear, feel, and see system functions.
- Demonstrate ABS braking events.
- Teach diagnosis of air faults, electrical faults, and defective components.

Includes complete curriculum!

- Operation manual.
- Student Assignments.
- High resolution, projector ready, schematics showing the complete pneumatic and electrical systems.
- Faulted pneumatic schematics (Instructor manual only).
- Faulted wiring schematics.
- 39 student assignments.
- Instructor guide with answer keys.
- This trainer uses high quality Bendix^{MC} components for years of useful service for your institution.

Optional accessories for your Air Brake Driving Simulator

- Set of Breakout Boxes with T-Harnesses for Premium (30255-7).
- Set of Defective Components for HV-125 (30256).
 - One (1) Bendix WS-24 Wheel Speed Sensor (93692-2).
 - Two (2) Bendix 12V ABS Modulator Valves (93692-4).
 - One (1) Bendix Quick Release and Double Check Valve (93692-9).
 - One (1) Bendix ATR-6 Traction Relay Valve (93692-6).



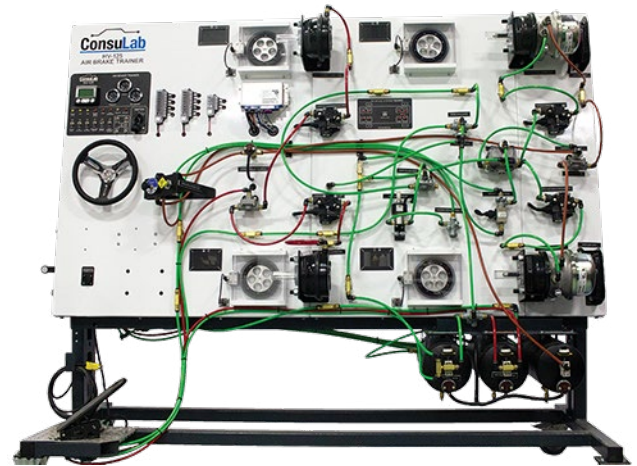
HV-125-BUS_053241
Transit bus air brake driving simulator
w/ ABS/ATC

The best air brake trainer – Now for transit buses.

- We’ve taken our best selling HV-125 and adapted it to meet the needs of transit bus programs!
- Imagine driving down the road with your class of students while demonstrating ABS, ATC and ESC functions on a complete air brake system with all students viewing the scan data and wheel speeds!

Take your technicians for a road test!

- Teach basic air brake inspections.
- Liberate yourself from lengthy setup times and exercise development
- Be setup to teach in 5 minutes.
- Challenge your students with basic, intermediate, and advanced exercises.
- 30+ pneumatic and electrical faults.
- Hear, feel, and see system functions.
- Demonstrate ABS braking events.
- Teach diagnosis of air faults, electrical faults, and defective components.



Available wheel ends for HV-125:

HV-124-FDM_053321
Front Air Drum with no
Spring Brake for HV-125



HV-124-DC_053319
Air Disc with Spring Brake
for HV-125



HV-124-DM_053320
Air Drum with Spring Brake
for HV-125



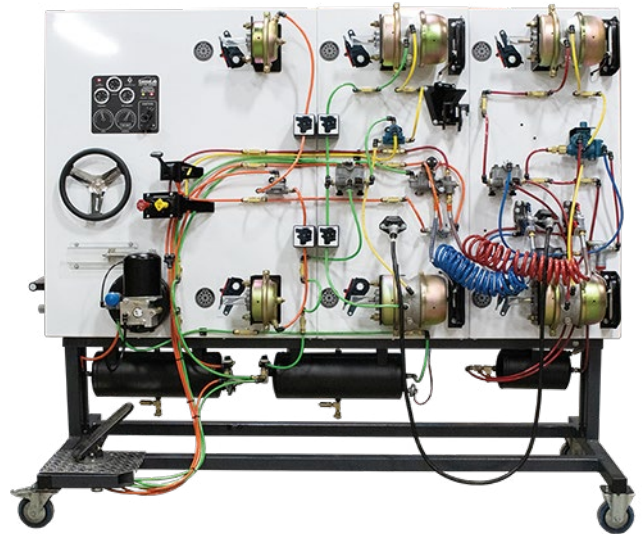
HV-120_052890 Foundation air brakes for driver training

Do you teach driver training? We have the air brake trainer for you!

A complete tractor and trailer system all on one product that will fit through a doorway and into your classroom. Efficiently teach drivers the importance of pre-trip inspections of the air brake system. Educational materials are designed to reinforce not only system operation, but also the importance of using checklists to document deficiencies and repairs. This will help reduce downtime of the whole fleet.

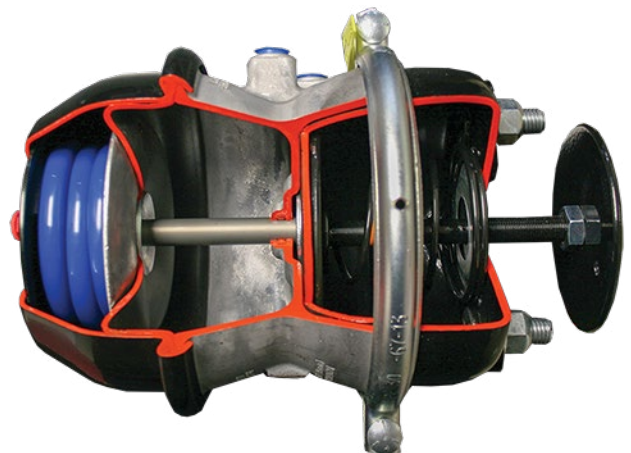
Curriculum

- Includes operation manual, pneumatic schematics with and without faults, instructor's guide and student assignments.
- 15+ student exercises.
- FMVSS121 compliant.
- DOT approved fittings.
- Contains no obsolete 1970s parts or configurations.
- Design based on 2021 truck fleet parts.
- This trainer makes training for the understanding of the air brake system. This prepares the learner to be accurate and efficient at pre-trip inspections.
- This trainer uses high quality Bendix™ components for years of useful service.



EC-127_053145 Cutaway 30-30 Brake Chamber

- Students can safely visualize the internal components and operation of the brake chamber
- Allows for the demonstration of both the service and parking circuits
- Clearly shows the mechanism that transfers the spring force to apply the parking brake



HV-126-DC_052960 Air disc wheel end training system with cutaways

A complete functional disc wheel end with tank and valving.

- This is a standalone system that simply requires shop air to operate.
- Fully functioning cutaway that showcases the operation of the disc brake wheel end.
- Cutaway hub so that the learner can correctly adjust the wheel bearings as per the TMC RP-618 specification.
- This trainer makes training for the maintenance of the foundation brake and wheel end right up at the level where it is easy to see. This prepares the learner to be accurate and efficient at periodic wheel end maintenance.
- This trainer uses high quality Bendix™ components for years of useful service.



HV-126-DM_052960 Air drum wheel end training system with cutaways

A complete functional drum wheel end with tank and valving.

- Standalone system, just provide air.
- Strategic cutaways show bearings, bearing races, drum, and s-cam.
- Includes operation manual.
- FMVSS121 compliant.
- DOT approved fittings.



EM-200-25_052984

Speed and position sensors trainer

- Demonstrates the operation, diagnosis, and testing of common types of analog and digital speed and position sensors.
- Demonstrates analog and passive sensors; Magneto-resistive, hall effect, inductive.
- For use with an oscilloscope. (Required)
- Includes a complete curriculum with student exercises.
- Shaft with tone wheels and speed control.
- Uses real vehicle sensors.



EC-510HV_052964

Functional cutaway diesel starter

- Cutaway starter that still operates.
- Students can see the solenoid plunger move, and sparks fly!
- Complete system includes ignition switch, solenoid, and relay.
- 4 faults to diagnose, test points throughout.
- All rotating components enclosed and safe.



CL-1919-06_ 053327

Ohm's law and DC circuits trainer

**Best selling ConsuLab product ever! Student tested proven design.
In use at 500+ schools around the world.**

- Built-in adjustable protected power supply.
- All components protected against incorrect wiring & short circuits!
- 1000s of students have learned ohm's law using this trainer!
- Industry leading curriculum package.
- Complete course on Ohm's law, series parallel and more.
- 266 pages of content.
- 31 student exercises.
- 11 student tests.
- Proven robust hardware.
- All components fixed to trainer.
- Easily sourced consumables (#194, 3157 etc.)
- Built-in multimeter
- Saves teacher's time.
- Consistency across multiple units, easy setup, pre-written labs.
- Exquisite top-quality gold-plated jumper leads minimize voltage drops.
- Full answer keys for all exercises and tests.

Available as a classroom set (12 units, storage case plus extra consumables.)

(CL-1919-12_0532065)



HV-1918-2S_053300

Heavy vehicle lighting system trainer

Hands-on learning for truck lighting systems.

Saves teacher's time.

- Students can begin building circuits with less than 5 minutes of introduction!
- Consistency across multiple units, easy setup, pre-written labs.
- Exquisite top-quality gold-plated jumper leads minimize voltage drops.
- Full answer keys for all exercises and tests.

Industry leading curriculum package.

- Complete course on lighting systems.
- 200+ pages of content.
- 19+ student exercises, written at 3 different levels!

Student tested, proven design.

- Robust hardware.
- Protected power supply.
- Modular Moduponent™ Design.
- Multiple configurations available to fit your class.

Teaches diagnostic procedures.

- Fault box with 12 faults.
- Voltage drops.
- Open circuits.
- All faults are diagnosable.

Available in the following configurations:

- Single workstation (HV-1918-2S_053300).
- Double workstation (HV-1918-2D_053301).
- Combo multiplex and heavy truck lighting (HV-MP-1918_053346).
- Tabletop stand (CL-1918-10S-01_052547).
- Upgrade kit (HV-1918-2U_053302).



MP-1918-1S_053040 **single-sided CAN Bus multiplex trainer**

Help your students become multiplexing experts.

Are your students struggling with multiplexing? Build their understanding & diagnostic confidence hands-on!

Multiplexing made easy:

- Students perform wiring hands-on, building a 4-module multiplex system.
- Follows SAE J1939 protocols.

Teaches real-world diagnostic strategies:

- Electronic fault box with 12 faults.
- Lack of communication.
- Voltage drops.
- Open circuits.
- All faults are diagnosable.

Industry leading curriculum package.

- Complete course on multiplex systems.
- 125+ pages of content, 20 student exercises.
- Full schematics.

Saves teacher's time.

- Consistency across multiple units, easy setup, pre-written labs.
- Exquisite top-quality gold-plated jumper leads minimize voltage drops.
- Full answer keys for all exercises and tests.

Student tested, proven design.

- In use at hundreds of schools.
- Robust hardware.
- Protected power supply.
- Available as single sided, double sided, tabletop, combination with other trainers (multiplex, heavy truck, etc.).

Available in the following configurations:

- Single workstation (MP-1918-1S_053040).
- Double workstation (MP-1918-1D_053041).
- Combo multiplex and heavy truck lighting (HV-MP-1918_053346).
- Tabletop stand (CL-1918-10S-01_052547).
- Upgrade kit (MP-1918-1U_053042).



AE-70-BK_053279 uScope digital storage oscilloscope - basic kit

- Small powerful single channel oscilloscope.
- Boots up in 4 seconds.
- 12-bit A/D converter, samples at 1 MHz.
- Includes test leads and charge cable.



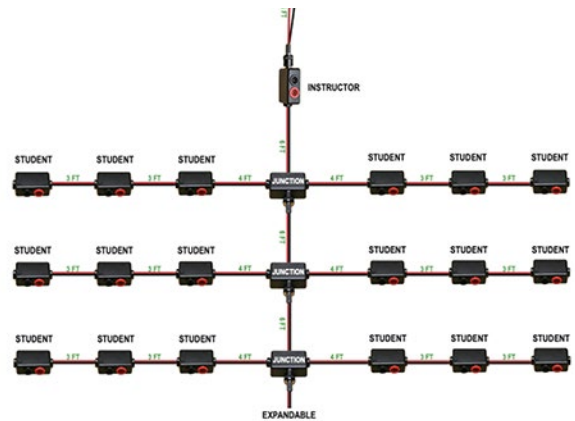
AE-71-MK_053280 uScope digital storage oscilloscope - master kit

- Small powerful single channel oscilloscope.
- Boots up in 4 seconds.
- 12-bit A/D converter, samples at 1 MHz.
- Includes carrying case, low amp probe, COP paddle & accessories.



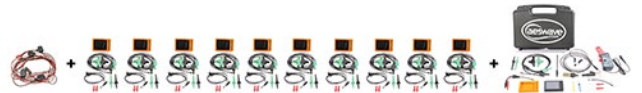
AE-72-SD_053281 Signal distribution harness

- Flexible configurations for any classroom.
- Bring signals to each student.
- Easy to use BNC connectors.



AE-73-CK_053282 uScope classroom kit

- uScope master kit for instructor.
- 10 x basic uScope kits for students.
- Distribution harness.



CL-1902_053242

Electromagnetism trainer

Equip your students for the electrified future. Apply theory hands-on.

Do your students struggle with electricity? Do you have challenges capturing their attention and getting them interested in how electric motors work? Do you want to equip them with the skills and knowledge necessary to work on hybrid and electric vehicles?

The ConsuLab CL-1902 Electromagnetism trainer can help challenge your students and keep them engaged.

Visualizes, teaches, and demystifies:

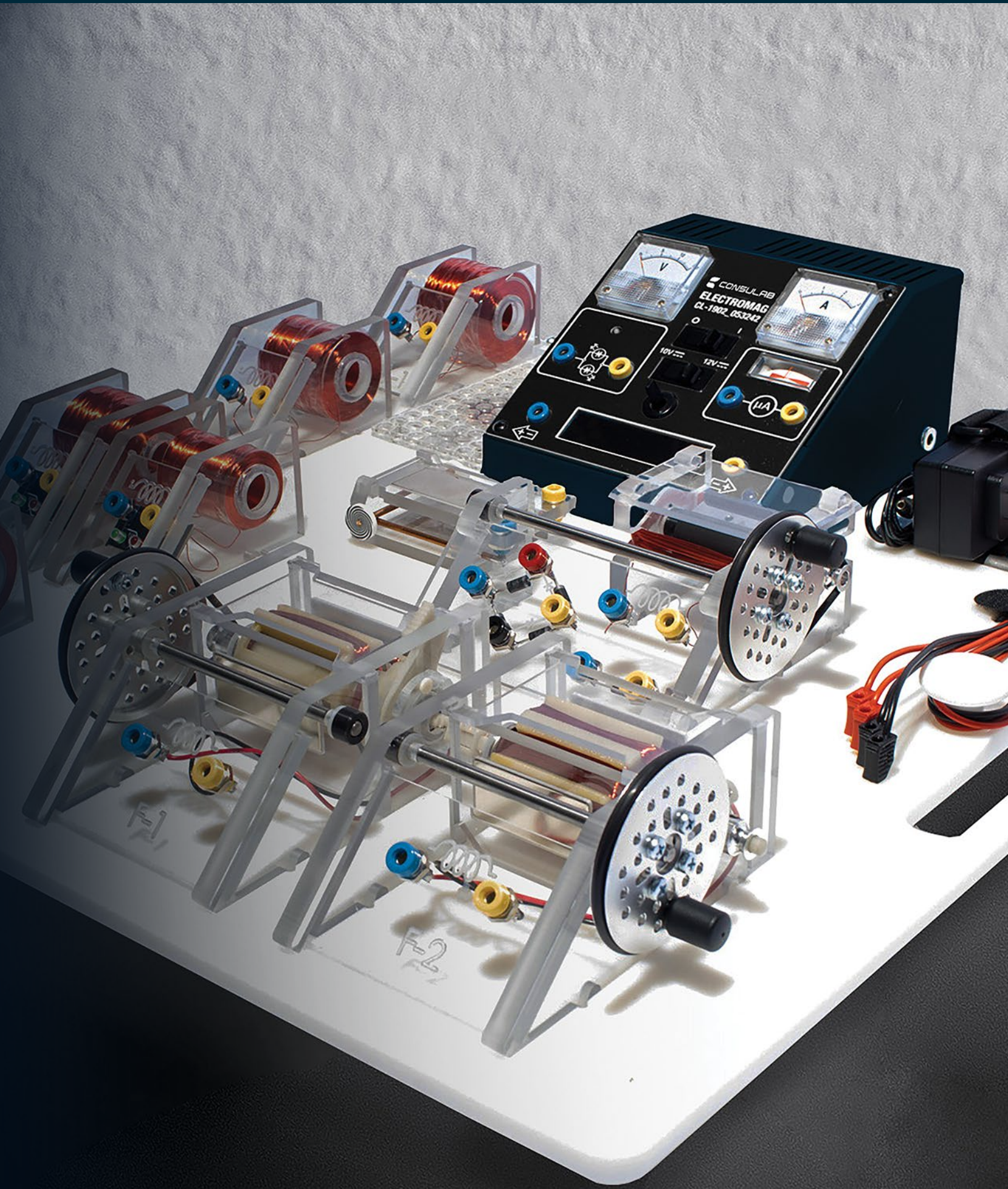
- Coils.
- Electromagnets.
- Magnets.
- Induction.
- Right-hand rule.
- AC generation.
- Rectification.
- DC motors.
- Motor/generators.
- Transformers.
- Permanent magnets.
- Solenoids.

This trainer will challenge your students and keep them engaged.

- Minimal setup time < 5 minutes.
- Easy to inventory.
- Provided student exercises and experiments guide students through the learning process.
- Up to 50+ hours of instructional time.

Available as a classroom set (12 units, storage case plus extra consumables.)

(CL-1902-12_053286)



CL-1930_053283 Connector Trainer - circuit and signal acquisition

A robust, reliable way to teach back-probing and oscilloscope use!

The Connector Trainer is not just a training aid; it's a purpose-built system designed for mastering the art of back-probing connectors, promoting intricate oscilloscope readings, and honing advanced diagnostic skills. It is the opposite of a breakout box; it provides the ideal learning environment for students to practice real-world back-probing techniques.

- Diverse signal exploration, from digital square waves to sine waves and variable voltage outputs.
- Practice oscilloscope use, using various time bases and voltage scales.
- 9 fault scenarios, demonstrating frequency changes, voltage drops, and the effects on electronics.
- Field serviceable, easily provisioned, and replaceable terminals and connectors.



EC-520_052945 Cutaway battery

- Small (14A-A2) 12 V lead acid battery.
- Battery case is cutaway to view internal plates.
- No electrolyte present.
- Comes with curriculum.



MD-4000-23_053344 Drivability electronics kit

This trainer brings the fundamentals of engine performance sensors to the classroom environment. Equip your students with confidence before working on an engine bench or the real vehicle.

- Hands-on learning.
- Automotive drivability components.
- Saves teacher's time.
- Consistency across multiple units, easy setup.
- Modular design.
- Can be upgraded/changed over time.
- Industry leading curriculum package.

Available in classroom sets.



MD-4000-22_053343 Advanced electronics kit

- This is for teaching advanced electronics, after students have learned the basics of electricity and ohm's law.
- Fully self-contained.
- Student-led hands-on learning.
- Automotive electronics components.
- Industry leading curriculum package.
- 125+ pages of content, 17 student labs.
- Full schematics.
- Saves teacher's time.
- Consistency across multiple units, easy setup, pre-written labs.
- Modular design.
- Can be upgraded/changed over time.

Available in classroom sets.



Electric Vehicles



EV-400_053287 EV High-Voltage Safety Trainer

Measure 400V DC in a completely safe, controlled, classroom environment.

Teach High-Voltage Safety in a compact classroom sized package through an intuitive, hands-on experiences for high-voltage testing, Personal Protective Equipment (PPE) use including gloves and insulated tools, **high voltage isolation testing** with a mega-ohmmeter, **high voltage interlock circuits**, first responders' loops, three phase motor control, high voltage power distribution, and much more.

The product has a **fault box** and a faulty component, allowing diagnostic practice. The system reacts as a real EV, demonstrating functions of various scenarios and components.

EV-400 transcends the limitations of traditional trainers. It's not just about demonstration; it's about active engagement, hands-on learning, and real-world application.

- Fault diagnosis 10 faults + 1 faulty component
 - High voltage loss of isolation
 - High voltage interlock loop
 - 12V supply problems
 - Air condition faults
 - PTC heater faults
 - Component faults
 - Harness faults
 - Contactor problems

This product is perfect for the following:

- Technical training programs: automotive, electrical engineering, emergency response.
- Educational institutions: motive power trades, vocational schools, community colleges, and high schools.
- EV manufacturers and repair shops: upskilling technicians and ensuring safety protocols.

The product includes student assignments, educational schematics and instructor schematics showing the faults.

Includes a PICO isolation meter and a set of large high voltage gloves.

Available as a classroom set (12 units and storage case) (EV-400-12_053355)

ConsuLab offers a wide range of diesel engines, both on-highway truck engines and off-road heavy equipment engines.

Teach the latest diesel and after treatment system technologies with ConsuLab diesel engine benches!

- High pressure common rail injection.
- Diesel oxidation catalyst (DOC).
- Cooled exhaust gas recirculation (EGR).
- Selective catalytic reduction (SCR).
- Diesel particulate filter (DPF).
- Diesel exhaust fluid (DEF).

Our diesel engines include the following features:

- Fault insertion.
- Breakout box test points.
- Deutsch 9 pin DLC J1939.
- OEM DTCs.
- Radiator and cooling package with protective guards.
- Programmable digital display.
- ECM breakout box.
- Ignition key switch w/test points.
- Indicator lamps.
- Enabling/disabling switches.
- DLC using SAE J1939 protocols.
- Foot operated fuel pedal.

Model	Description	Typical Application	Emissions	Parts	Best for
HV-950-B6.7_035101	ConsuLink engine bench Cummins B6.7 EPA 2021 new	Medium duty trucks	EPA2021	New	Most diesel programs
HV-950-QSB_035106	Diesel engine bench Cummins QSB6.7 TIER 4F new	Heavy equipment	Tier 4 final	New	Off road heavy equipment
HV-950-C4.4-TIER4_035153	Diesel engine bench CAT C4.4 TIER4F new	Heavy equipment	Tier 4 final	New	Mining, heavy equipment off road
HV-950-C7.1-TIER4_035154	Diesel engine bench, CAT C7.1 TIER4F new	Heavy equipment	Tier 4 final	New	Mining, heavy equipment off road
HV-950-DD15-DD16_035163	Diesel engine bench GHG17 recycled	Class 8 trucks	GHG17	Recycled	Truck diesel programs
HV-950-X15_035103	Diesel engine bench Cummins X15 EPA 2017 recycled	Class 8 trucks	EPA2021	Recycled	Truck diesel programs

HV-950-B6.7_035101 ConsuLink engine bench Cummins B6.7 EPA 2021 new

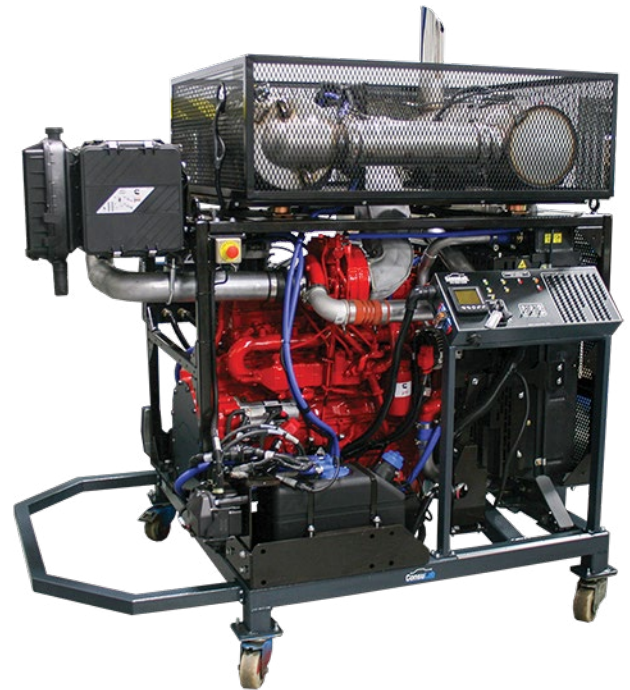
Now with the ConsuLink™ Student learning platform

The HV-950-B6.7_035105 Cummins diesel engine bench w/ EGR, DPF, SCR, is mounted on a tubing steel stand. Completely operational and safe, this standard trainer is easy to work on and complies with manufacturer rules and specifications related to all OEM codes, colors and electronics. This engine is primarily used for over-the-road markets.



HV-950-QSB_035106 Diesel engine bench Cummins QSB6.7 TIER 4F new

The Cummins QSB6.7 Diesel Engine Bench is mounted on a tubing steel stand. Completely operational and safe, this standard trainer is easy to work on and complies with manufacturer rules and specifications related to all OEM codes, colors and electronics. Meets TIER 4F emissions regulations. This engine is aimed at industrial, agricultural, construction and power gen markets.



HV-950-C4.4-TIER4_035153 Diesel engine bench CAT C4.4 TIER4F new

The Caterpillar C4.4 diesel engine bench is mounted on a tubing steel stand. Completely operational and safe, this standard 4.4L diesel engine trainer is easy to work on and complies with manufacturer rules and specifications related to all OEM codes, colors, and electronics. Meets TIER 4 emissions regulations.



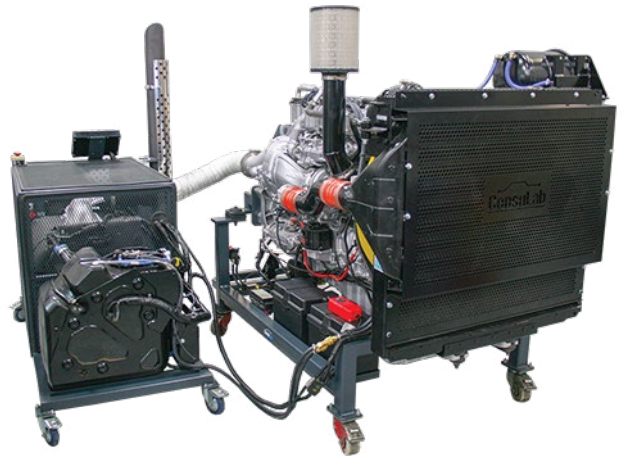
HV-950-C7.1-TIER4_035154 Diesel engine bench CAT C7.1 TIER4F new

The new Caterpillar C7.1 diesel engine bench is mounted on a tubing steel stand. Completely operational and safe, this standard trainer is easy to work on and complies with manufacturer rules and specifications related to all OEM codes, colors and electronics. Meets TIER 4 Final emissions regulations.



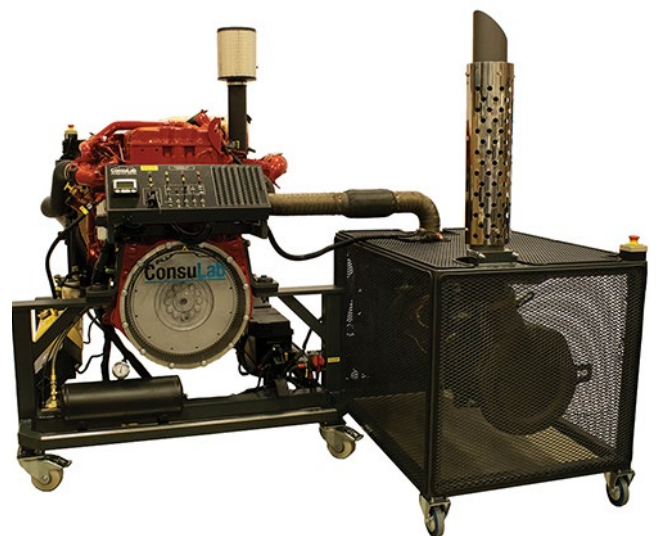
HV-950-DD15-DD16_035163 Diesel engine bench Detroit Diesel GHG17 recycled

Specially built to meet all diesel engine performance and repair tasks. The recycled EPA 2013 Detroit Diesel DD15/DD16 diesel engine bench w/EGR, DPF, SCR, is mounted on a tubing steel stand. Completely operational and safe, this standard trainer is easy to work on and complies with manufacturer rules and specifications related to all OEM codes, colors and electronics.



HV-950-X15_035103 Diesel engine bench Cummins X15 EPA 2017 recycled

Especially built to meet all diesel engine performance and repair tasks. The Cummins ISX15 EPA 2013 diesel engine bench w/EGR, DPF, SCR, is mounted on a tubing steel stand. Completely operational and safe, this standard trainer is easy to work on and complies with manufacturer rules and specifications related to all OEM codes, colors and electronics.



CONSULINK™

ConsuLink™ Student Learning Platform

You can now interact with ConsuLab product in the new following ways.

ConsuLink is another intuitive solution we now offer with some of our products. This tablet-based learning platform resonates with today's students as it has a familiar touchscreen interface and all assignments, faults, schematics and tasks are preloaded onto the tablet.

ConsuLink™ now available on the HV-950-B6.7 engine bench.

Reference information — No more hunting paperwork

- Component locator.
- Breakout Box pins.
- Videos.
- Operation manual.
- Wiring schematics.
- Safety warnings.

Student mode

Student case studies

We give the students the customer complaint and instructions for them to diagnose the problem.

Scenario numbers

Allow an instructor to assign students any pre-set fault or case study, without the students knowing what it is. Liberating instructor time.

Instructor mode

Instructor case studies

Gives you all the answer keys and reasoning for each student case study.

Instructor led lessons

Instructions and pre-sets prepared by educational experts like having a room full of mentors!

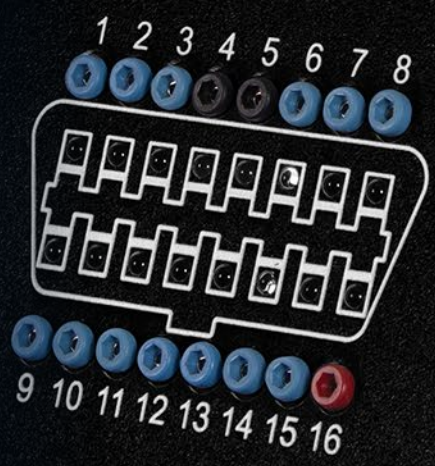
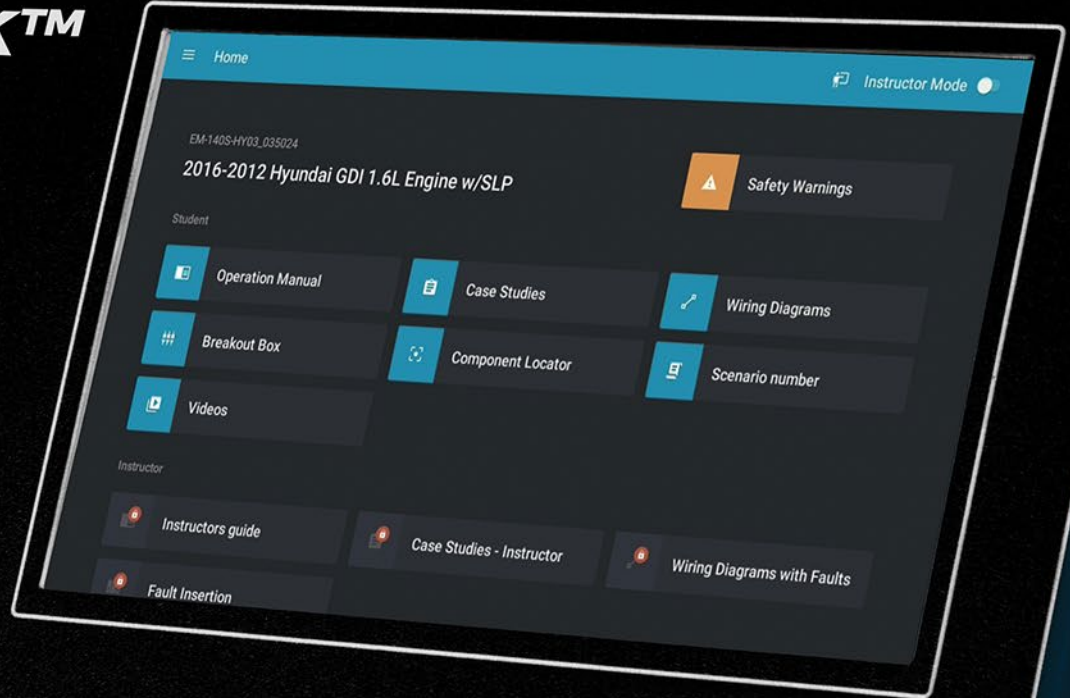
Faults & Schematics

Gives you all the information you need on each fault.

Manual fault insertion

Ability to create your own customized case studies.

CONSULINK™



CONSULAB

HV-145S-KB02_053277 Diesel repair trainer 2-cyl mechanical injection

Create intrinsic motivation with your students!

The ConsuLab HV-145S-KB02_053277 is a diesel engine repair trainer with a Kubota 2-cylinder mechanically injected diesel engine on a swivel stand. This stand is designed for student instruction and practice covering engine mechanical inspection, disassembly, measurement, and reassembly. The product is designed to facilitate quick and easy setup to run and test each engine in a safe, and controlled environment. It includes two sub-assemblies: a swivel engine stand and a starting station.

What activities do the students perform with this product?

- Engine identification to facilitate the location of operation, service, and parts manuals.
- Engine disassembly and reassembly.
- Engine diagnostics.
- Component measurements.
- Compression testing.
- Engine mechanical diagnostic testing procedures.
- Starting and charging system operation.
- Engine emissions testing.
- Component identification.

Support materials – more than just the trainer!

- Operation manual.
- 10 student activities.

Application

- Kubota Z482 Supermini 2-cylinder diesel engine.



EC-490_053131 Cutaway diesel exhaust aftertreatment system

- Visualize the stages of aftertreatment & chemical reactions in the exhaust system.
- Shows the flow of exhaust and the changes of gases as they pass through each component.
- Includes all modern systems:
 - DOC (diesel oxidation catalyst).
 - DPF (diesel particulate filter).
 - SCR (selective catalytic reduction).
 - DEF injection (diesel exhaust fluid, urea).
- Every pollutant, gas and molecule represented by a different color LED.
- Adjust the speed and flow of the reactions, go step-by-step or automatic.
- Be able to demonstrate and show the purpose of the DOC in the exhaust.
- Show how the lean NOx trap works in the SCR
- Easy to demonstrate and show the reduction and oxidization process in the exhaust.
- Be able to demonstrate and show the function of UREA in the aftertreatment system.
- Show the maintenance items of the different components.
- Includes a complete curriculum with student exercises.
- Completely enclosed and safe.
- Uses real vehicle catalysts, components & sensors.
- Provides an easy way to explain and demonstrate post-treatment of diesel exhaust pollution.



HV-130_053243 **Heavy truck steering system trainer**

Complete operating front axle system of a truck in your classroom

Designed for complete, safe and protected steering component accessibility for teaching steering, alignment and service while maximizing lab space utilization and minimizing teacher setup and prep time.



HV-101_052948 Stand-Alone Heavy Vehicle HVAC Trainer - M2

A complete standalone HVAC system from a truck.

Built from brand-new components.

- Clear tubing visualizes refrigerant change of state.
- Built in pressure gauges.
- R134A refrigerant.
- Thermostatic expansion valve (TXV).
- Electronically operated mode and blend doors.
- OEM service ports.



EC-2100_053053 Cutaway TXV H-block

- Allows easy visualization of valve function.



MD-4000-24_053345 **HVAC electronics Moduponent™ kit**

This trainer brings the fundamentals of HVAC system electrical sensors to the classroom environment. Equip your students with confidence before working on an engine bench or the real vehicle.

- Hands-on learning.
- Automotive HVAC components.
- Saves teacher's time.
- Consistency across multiple units, easy setup.
- Modular design.
- Can be upgraded/changed over time.

Available in classroom sets.



EM-2000-YF_053330 **A/C system trainer**

The ConsuLab EM-2000-YF R1234yf Air Conditioning trainer is a complete A/C system with unique features designed to enhance the instruction of air conditioning physics.

The trainer :

- Uses the H-Block TXV design with R1234yf flow control.
- Uses common automotive components.
- Can be used in both classroom and shop environments.
- Utilizes a hermetically sealed and internally protected compressor.
- Operates on 120V 15A 60Hz circuit.



EM-2000-OT_052941 A/C system with orifice tube

The Consulab EM-2000-OT Air Conditioning trainer is a complete A/C system with unique features designed to enhance the instruction of air conditioning physics.

The trainer:

- Uses the orifice tube design of refrigerant flow control.
- Uses common automotive components.
- Can be used in both classroom and shop environments.
- Utilizes a hermetically sealed and internally protected compressor.
- Operates on a 120V 15A 60Hz circuit.



EM-2000-TXV_052661 A/C system with TXV

The Consulab EM-2000-TXV Air Conditioning trainer is a complete A/C system with unique features designed to enhance the instruction of air conditioning physics.

The trainer:

- Uses the TXV (Thermal Expansion Valve) design of refrigerant flow control.
- Uses common automotive components.
- Can be used in both classroom and shop environments.
- Utilizes a hermetically sealed and internally protected compressor.
- Operates on a 120V 15A 60Hz circuit.



EM-2000-HB_053094 **A/C system with H-block (TXV)**

The ConsuLab EM-2000-HB Air Conditioning trainer is a complete A/C system with unique features designed to enhance the instruction of air conditioning physics.

The trainer :

- Uses the H-Block TXV design of refrigerant flow control.
- Uses common automotive components.
- Can be used in both classroom and shop environments.
- Utilizes a hermetically sealed and internally protected compressor.
- Operates on 120V 15A 60Hz circuit.



FP-MF102
Basic through advanced hydraulics

The best and safest hydraulic training system available.

Configurable to meet your needs.

The trainer teaches :

- Fixed displacement pumps.
- Pressure compensated pumps.
- Directional control valves (6)
 - Tandem center
 - Closed center
 - Float center
 - Monoblock
- Relief valves
 - Pilot operated
 - Direct operated
- Hydraulic cylinders – with a load.
- Hydraulic motors – with a load.
- And much more!

Includes curriculum and worksheet.

NO MORE MESS with Flat faced leakless hydraulic couplers.



Model	Description	Workstations	Troubleshooting	Best for
FP-MF102S-H	Basic through advanced hydraulics - single station	One	None	Fundamentals – high schools
FP-MF102D-H	Basic through advanced hydraulics, double station	Two	None	Fundamentals – high schools
FP-MF102S-H-TS	Basic/advanced hydraulics w/TS, single station	One	Yes	Advanced
FP-MF102D-H-TS	Basic/advanced hydraulics w/TS, double station	Two	Yes	Advanced
FP-MF102S-H-TSE	Basic/advanced hydraulics w/touchscreen, single	One	Touchscreen, student-led	Flagship diesel and hydraulic programs
FP-MF102D-H-TSE	Basic/advanced hydraulics w/touchscreen, double	Two	Touchscreen, student-led	Flagship diesel and hydraulic programs

FP-MF100S-BH Basic hydraulics

- Modular system.
- Plug and play components.
- Teaches fundamentals.
- Configurable to your program.
- For entry level programs.
- Available single or double workstation.



FP-MF200-CAV Pump cavitation simulator

- Perform live cavitation demonstrations that your student can hear, see and feel.
- Differentiate between cavitation and pseudo-cavitation.
- Clear reservoir shows vortex.
- Pressure gauges show differential.
- Clear tubes show aeration.



FP-MF300-VCLS Steering system & hydrostatic transmission

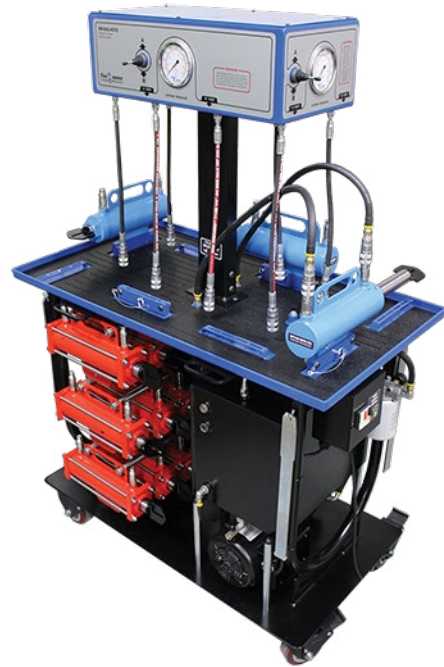
- Fit a complete hydrostatic system through any door.
- Teaches Orbitrol steering.
- Available with troubleshooting option.



FP-MF400-HCTS Hydraulic cylinder rebuild station

Designed to help instructors teach and students learn how to safely and correctly perform the following skills:

- Overhaul a hydraulic cylinder.
- Identify and use the tools needed to overhaul a hydraulic cylinder.
- Inspect the components in a hydraulic cylinder to determine the root cause of a failure.
- Replace piston and gland seals.
- Test a hydraulic cylinder.
- Air bleed a hydraulic cylinder.



FP-MF500-HT-TSE Hydrostatic transmission - implement and steering

- Fit a complete hydrostatic system through any door.
- Teaches Orbital steering.
- Available with troubleshooting option.



FP-MF600-1HP One-Human power basic hydraulics simulator

- Boom cylinder permits students to see how pressure responds to changes in surface area when the load is constant.
- Due to the fact the student is the prime mover, the student can see first-hand how changes in pedal speed relate to changes in actuator speed.
- This also allows student to see first-hand how they must respond by exerting more or less power in response to changes in flow and pressure.



FP-MF700S-PN Pneumatic bench

- Ability to accept almost any, and every, type of pneumatic component, including your own.
- Ability to adapt to any skill level from basics through electro-pneumatics.
- Have industry-standard safety lockout valves: the same ones used in industry so you can teach your students to think safety and work safely.
- Light-weight frame that is compact, rigid, mobile, and extremely durable.
- Handcrafted with pride in the USA with unrivalled quality.
- Ability to grow as your needs and budget grow.



FPTI™ offers a wide variety of cutaway models of hydraulic components. FPTI™ studies every component to make sure critical details remain intact, both visual and operational.

FP-VDP-CM Cutaway Over-center variable displacement pump



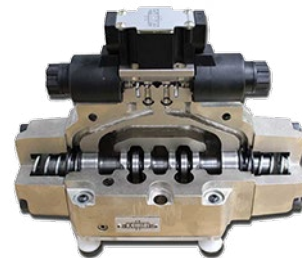
FP-PCP-CM Cutaway axial piston var. vol. pressure comp. pump



FP-PORV-CM Cutaway pilot-operated pressure relief valve



FP-DCV-08-CM Cutaway D08 directional control valve



FP-OSV-CM Cutaway Orbitrol steering valve



FP-DAC-CM Cutaway cylinder (double acting, single rod)



FP-GP-CM Cutaway gear pump



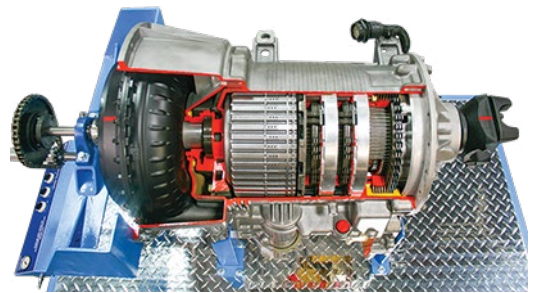
EC-1106-01_052742 Cutaway Allison transmission - 1000 series

- All clutches and bands activated by air pressure.
- Demonstrate all transmission speeds.



EC-1106-03_052742 Cutaway Allison transmission - 3000 series

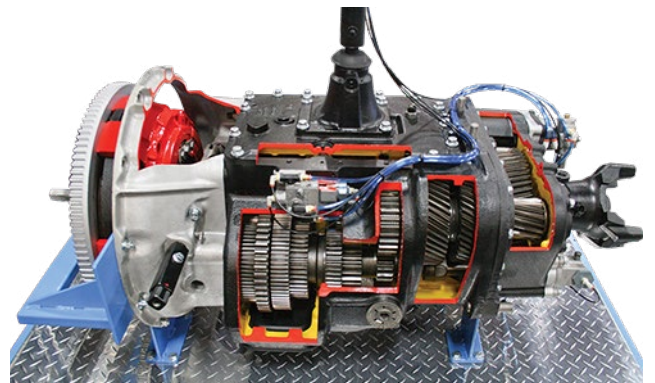
- Driven by hand crank.
- Allows visualization of gear changes, planetary gear sets and clutches.
- Gear changes can be made using regulated air pressure and provided controls.



EC-1108_053155 Cutaway Eaton transmission

The EC-1108 cutaway Eaton transmission has been designed for teaching Eaton heavy-duty transmission theory and operation. This model provides several forward speeds and reverses, consisting of a front section and an auxiliary section. The auxiliary section contains LO and HI range ratios, and the L and H splitter gear ratios. When in HI range, the gear ratios can be split by using the splitter control button.

- Driven by hand crank.
- Allows visualization of gear changes.
- Gear changes can be made using regulated air pressure and provided controls.



EM-1100_053254 Planetary gear set trainer

- Easy student visualization of planetary operation.
- Sun, ring gear and carrier can be held, driven, or allowed to react.
- Demonstration of seven gear ratios is available.
- Tabletop portability.
- Gear set diameter – 21" / 53 cm.



EM-200-28_053054 Driveshaft working angle trainer

- Variances in speed caused by the universal joint flexing can be audibly demonstrated using toothed wheels.
- Incorporates a slip clutch so the driveshaft can be handled and stopped by hand without injury.
- Different driveshaft angles can be selected using the adjustment system.



Main Features of ConsuLab products

- Mobility
- Short set-up time
- Circuit components arranged in logical order
- Components and corresponding symbols are visible
- Occupies only a small area of the work bench
- Easily stored
- Additional components may be added to modules
- Designed with student safety in mind
- In tune with industry practices

Limited warranty

ConsuLab warrants that all systems which it manufactures are free from defects in workmanship and materials, provided that they are used under normal conditions and within the limits of the relevant specifications. This warranty is effective for one year from the date of delivery, and excludes any other warranty, whether oral or implied, such as (but not restricted to) any warranty as to fitness for a particular use.

ConsuLab will repair or replace at its sole discretion any part found to be defective during the period of the warranty. The liability of ConsuLab is limited to repairing or replacing parts in the system found to be defective and under no circumstances will ConsuLab assume responsibility for losses or other expenses which arise directly or indirectly from any malfunction of the system.

In no circumstances can ConsuLab be held liable for any personal injury or material loss or damage to any person or equipment, which is caused by any defect in the system other than as covered in this warranty. This warranty is not transferable. Any unauthorized modification in the system, or any falsification or removal of the serial number will immediately render this warranty null and void.

Catalog Contents

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