

Creating skilled **automotive** engineers

Working with STEM

Complete Automotive Program

Aligned to NATEF

Knowledge and Skills Lessons



LJ CREATE[™]
Learning for life



Working with STEM

→ **AutoLab**

Age 16+

→ Welcome

We're LJ Create, Education Specialists since 1979

Since 1979 we have been providing award winning, world-class active learning solutions for technical education.

Today we create complete systems combining digital lesson libraries and tailor-made hardware kits that deliver **innovative, inspiring learning** in science, technology, automotive, and engineering.

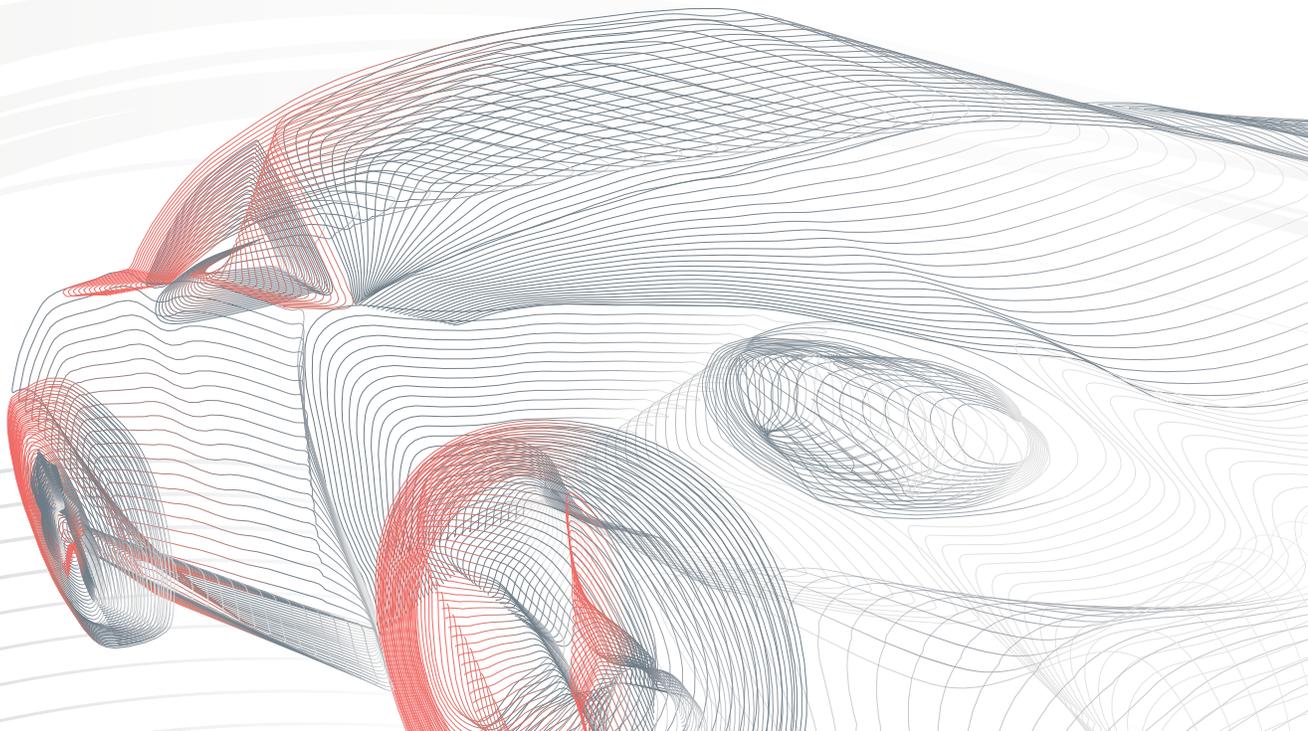
At LJ Create our mission is to enable learners throughout the world to achieve their full potential in a wide range of science and engineering areas by providing innovative teaching solutions for schools and further education.

AutoLab has been one of our flagship learning programs since 2001. Now we are relaunching AutoLab alongside **Working with STEM**, our brand-new cloud-based library of over 4,300 vocational lessons.

The AutoLab program is **a complete system of hardware and software for teaching automotive repair skills to NATEF standards**. Alternatively, our high-tech trainers and unique simulators could make a fantastic addition to an existing program in your high school or college.

Our skilled team of curriculum developers are automotive specialists; they produce up-to-date lesson plans, materials and assessments to make teaching and documentation easy.

To find out more about our hardware range of operational auto rigs, electronic panel trainers, sectioned trainers and more, please turn to **page 8**. If you want to see how our learning program aligns with NATEF standards, you can read more on **page 4**. Or, if you'd like to find out about our collection of lessons, please take a look at **page 6**.



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Pull-out Section (Center Pages)

- NATEF Crosswalk



→ AutoLab and NATEF

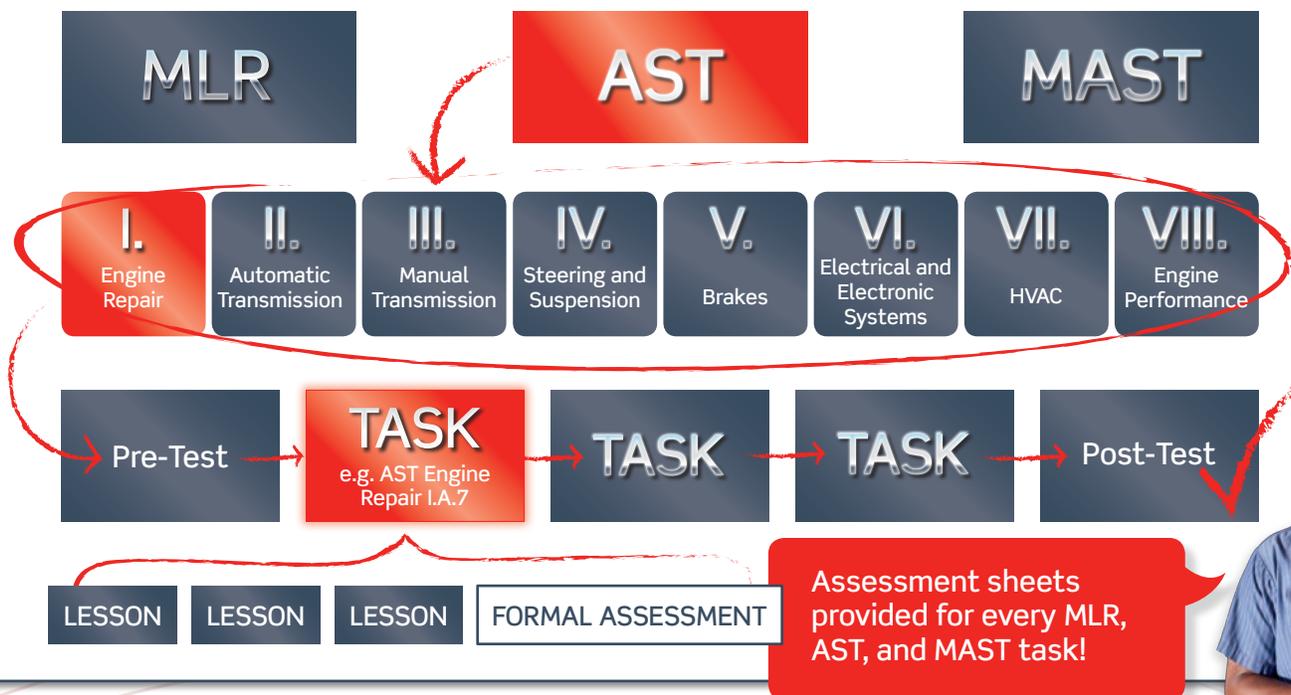
AutoLab and NATEF: your learning journey

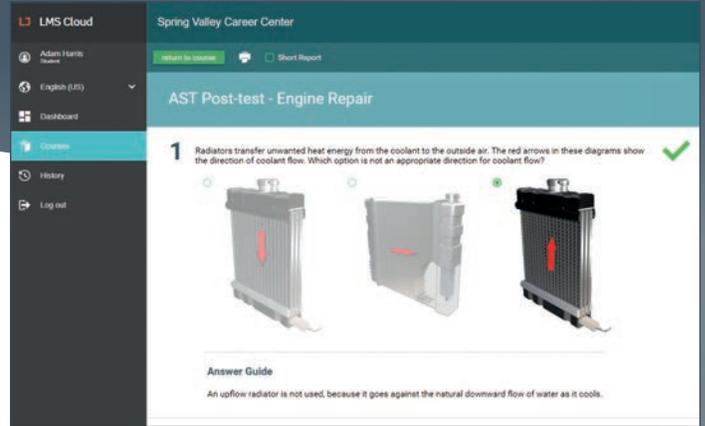
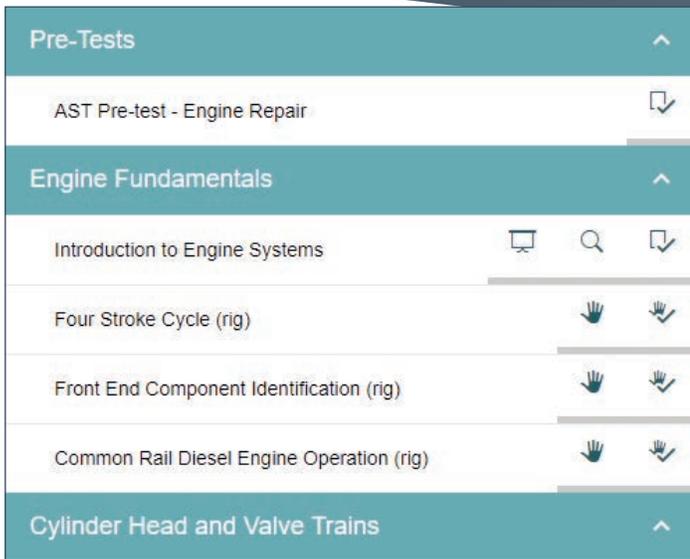
Inspired by NATEF's specific tasks and learning outcomes, the **AutoLab learning journey** equips your students with the skills, knowledge, and experience they need to become successful auto technicians.

The AutoLab learning journey follows the NATEF framework at every level; MLR, AST and MAST. In each subject area, for example Engine Repair, your AutoLab journey begins with the specific **tasks** and **learning outcomes** defined by NATEF.

Automobile Service Technology (AST) Task List	
1 Engine Repair	
A General: Engine Diagnosis, Removal and Reinstallation (R & R)	
1	Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.
2	Research applicable vehicle and service information, such as internal engine operation, vehicle service history, service precautions, and technical service bulletins.
3	Verify operation of the instrument panel engine warning indicators.
4	Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action.
5	Install engine covers using gaskets, seals, and sealers as required.
6	Remove and replace timing belt, verify correct camshaft timing.
7	Perform common fastener and thread repair, to include: remove broken bolt, restore internal and external threads, and repair internal threads with thread insert.
8	Inspect, remove and replace engine mounts.
9	Identify hybrid vehicle internal combustion engine service precautions.
10	Remove and reinstall engine in an OBDII or newer vehicle; reconnect all attaching components and restore the vehicle to running condition.

THE NATEF LEARNING JOURNEY



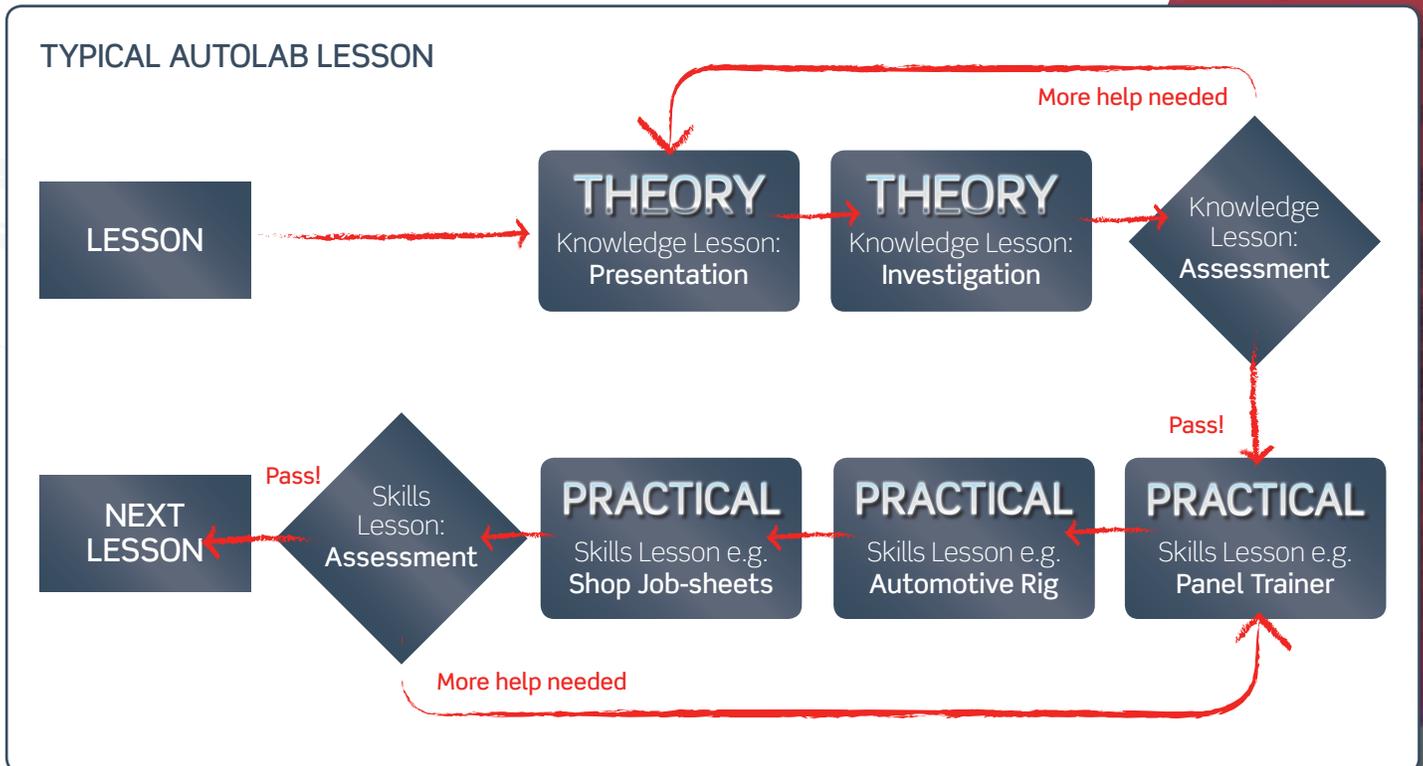


AutoLab guides students through each lesson in the task, e.g. AST Engine Repair I.A.7, with a series of **Knowledge Lessons** in the form of presentations, simulations and investigations to reinforce a theoretical understanding of the subject area. At this point, you can confirm your students' knowledge with a short assessment.

Once students are confident, they can move on to practical **Skills Lessons** in the classroom or shop, using our operational auto rigs, panel trainers, circuit trainers, sectioned trainers, and shop activities including workshop job sheets.

Again, you can confirm your students' knowledge with a short assessment. The process repeats with the next lesson in the task.

When ready, students complete their **formal assessment** to conclude the task.



→ Knowledge Lessons

The AutoLab digital library

The AutoLab **digital library** is a comprehensive resource for all the theory behind NATEF's specified subject areas. Students can access the library through an online portal; no specialist software or downloads are needed. An Internet connection and browser is all they require to access our collection of **Knowledge Lessons**.

Our Knowledge Lessons consist of **Presentations** for use in front of a class, or for students to refresh their knowledge individually; **Investigations** where students can put knowledge into practice with tasks and challenges; and **Assessments**, short quizzes with instant feedback so you can be confident that your students are ready to progress.

Presentations



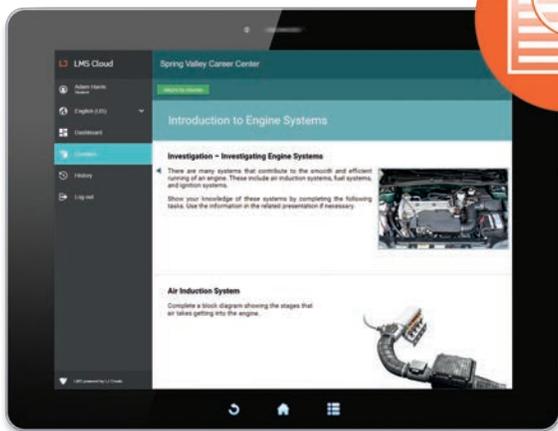
Simulators



Simulators

As well as lessons, our library includes several unique simulators of vehicle systems such as Hybrid Engines and CAN bus systems.

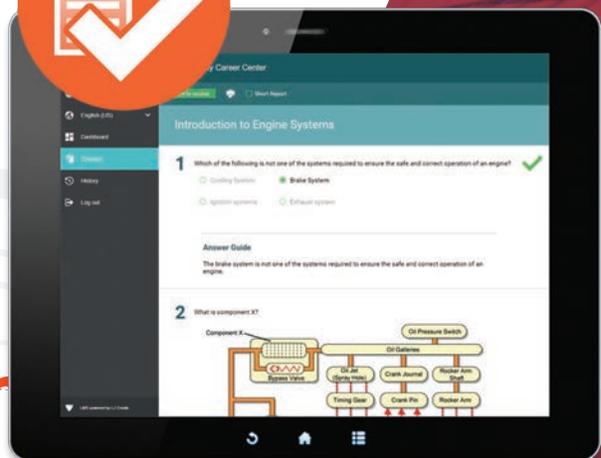




Support and Standards

It's easy to see where our lessons align with NATEF: just use the Standards menu on the right to filter lessons by NATEF level, subject and task.

We also include academic support in the science and math concepts relating to each subject area. Just click on the Support tab for supporting lessons.

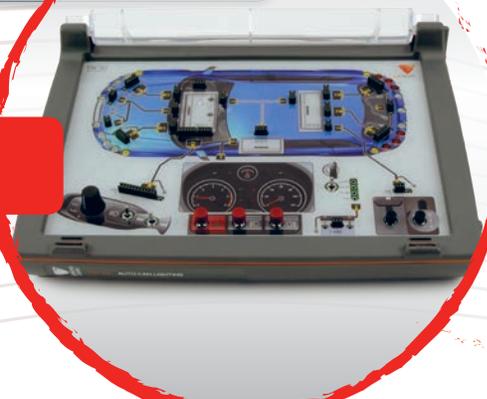
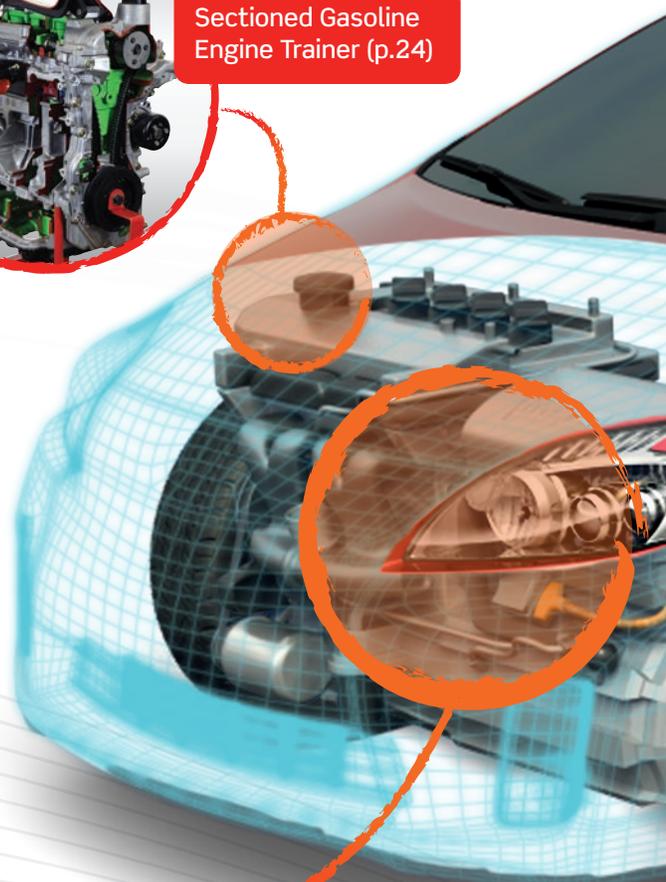
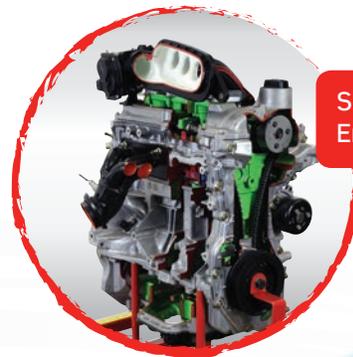
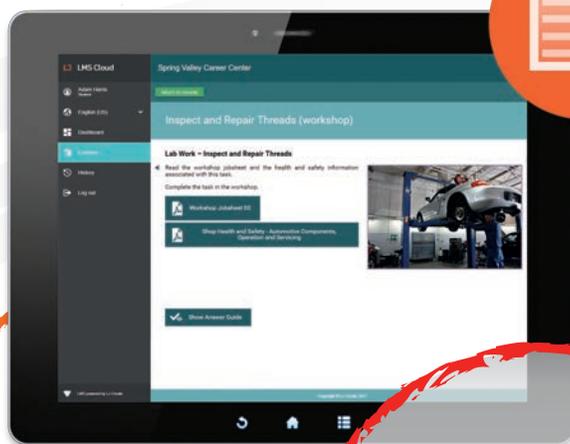


→ Skills Lessons

Guide your students from the classroom to the shop

What is involved in maintaining and repairing a modern vehicle? All modern cars use a complex CAN Bus network to control all of their electrical systems, from raising and lowering a window to stopping and restarting the engine automatically to save fuel. This level of complexity requires new skills to be learned by today's automotive students. In addition, the importance of traditional, hands-on mechanical knowledge and skills has not diminished.

Our **Skills Lessons** are also found in our AutoLab Digital Library, and consist of practical activities that can be undertaken on our range of automotive training equipment, as well as shop job sheets, and health and safety guidelines.



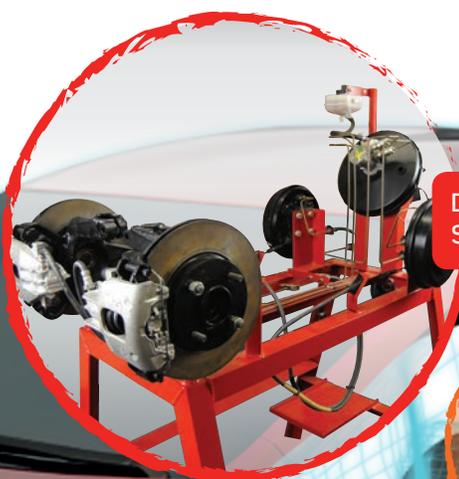
Modern Auto Lighting Circuits Trainer (p.11)

Sectioned Gasoline Engine Trainer (p.24)

Practical Tasks

Our training equipment ranges from cut-away **sectioned trainers** that allow students to see what is happening inside working components, to desktop **trouble-shooting trainers and electronic panel trainers** that simulate complex automotive systems, through to fully-functioning **operational auto rigs and vehicle trainers**.

We don't just cater to light vehicles, please see page 26 - 30 for equipment for medium and heavy vehicle training.



Disc and Drum Braking System Trainer (p.17)



Hybrid Vehicle Systems Panel Trainer (p.14)



Steering and Suspension System Trainer (p.16)

Light Vehicle Autotronics Circuit Trainers

Our new range of autotronics trainers present a **practical approach to theoretical learning**. Your students can confidently develop diagnostic skills from the safety of the classroom. Faults can be introduced to the system of each trainer via a fault code, which highlights the area that should be investigated in order to solve the problem. The trainers are protected with a hinged cover and are stackable for easy storage.

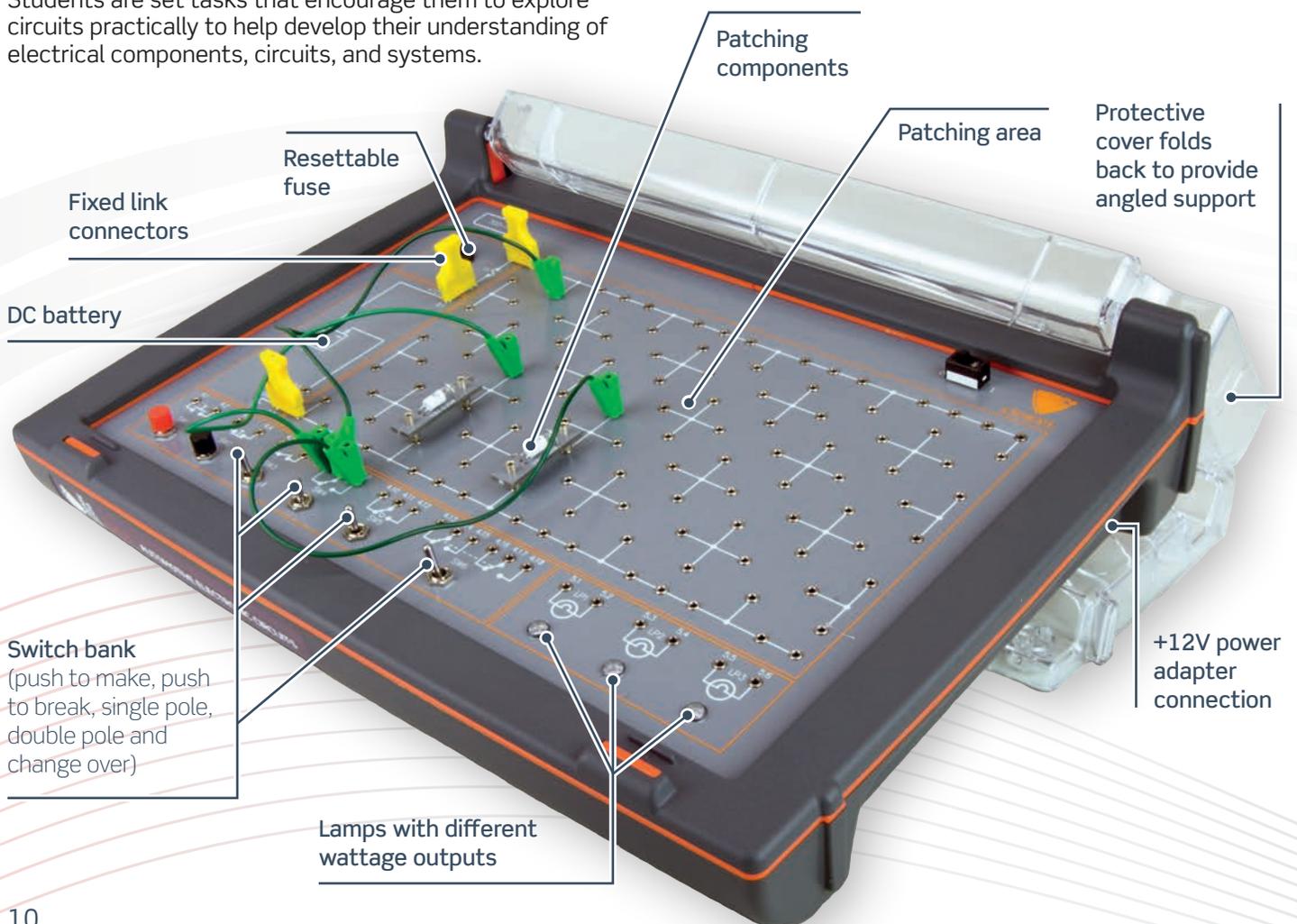
Auto Electronics Trainer (700-10)

This hands-on learning resource allows students to build a variety of introductory automotive electronic circuits using a range of on-board and carrier-mounted components.

Students are set tasks that encourage them to explore circuits practically to help develop their understanding of electrical components, circuits, and systems.

Order as:

- 700-10 Auto Electronics Trainer



Modern Auto Lighting Circuits Trainer (701-02)

Our autotronics trainers are designed to provide a practical approach to theoretical learning. Students are set tasks that encourage them to explore CAN controlled lighting circuits practically and improve their knowledge of electrical components, circuits, signals and systems.

Order as:

- 701-02 Modern Auto Lighting Circuits Trainer



Modern Starting and Charging Systems Trainer (720-02)

This trainer is focused on the starting and charging systems of a modern vehicle. Students are set tasks that encourage them to explore CAN Data Bus systems practically.

Students will also be directed to work through a number of fault-finding activities, encouraging fault-diagnosis skills.

Order as:

- 720-02 Modern Starting and Charging Systems Trainer



Modern Auxiliary Systems Trainer (721-01)

Students are set tasks that encourage them to explore CAN Bus electric window, door mirror, seat and central locking circuits practically and improve their knowledge of these systems.

Students will also be directed to work through a number of fault-finding activities, encouraging fault-diagnosis skills.

Order as:

- 721-01 Modern Auxiliary Systems Trainer



Light Vehicle Autotronics Panel Trainers

Our innovative computer-linked panel trainers give students and instructors the opportunity to **demonstrate and investigate a range of simulated vehicle operations**. These trainers are designed to be used in a classroom environment with test points at a safe voltage level.

To facilitate the development of diagnostic and fault-finding skills, these panels include a range of fault insertion options to simulate typical real-world system malfunctions. Your students can perform troubleshooting tasks on the system using diagnostic equipment.

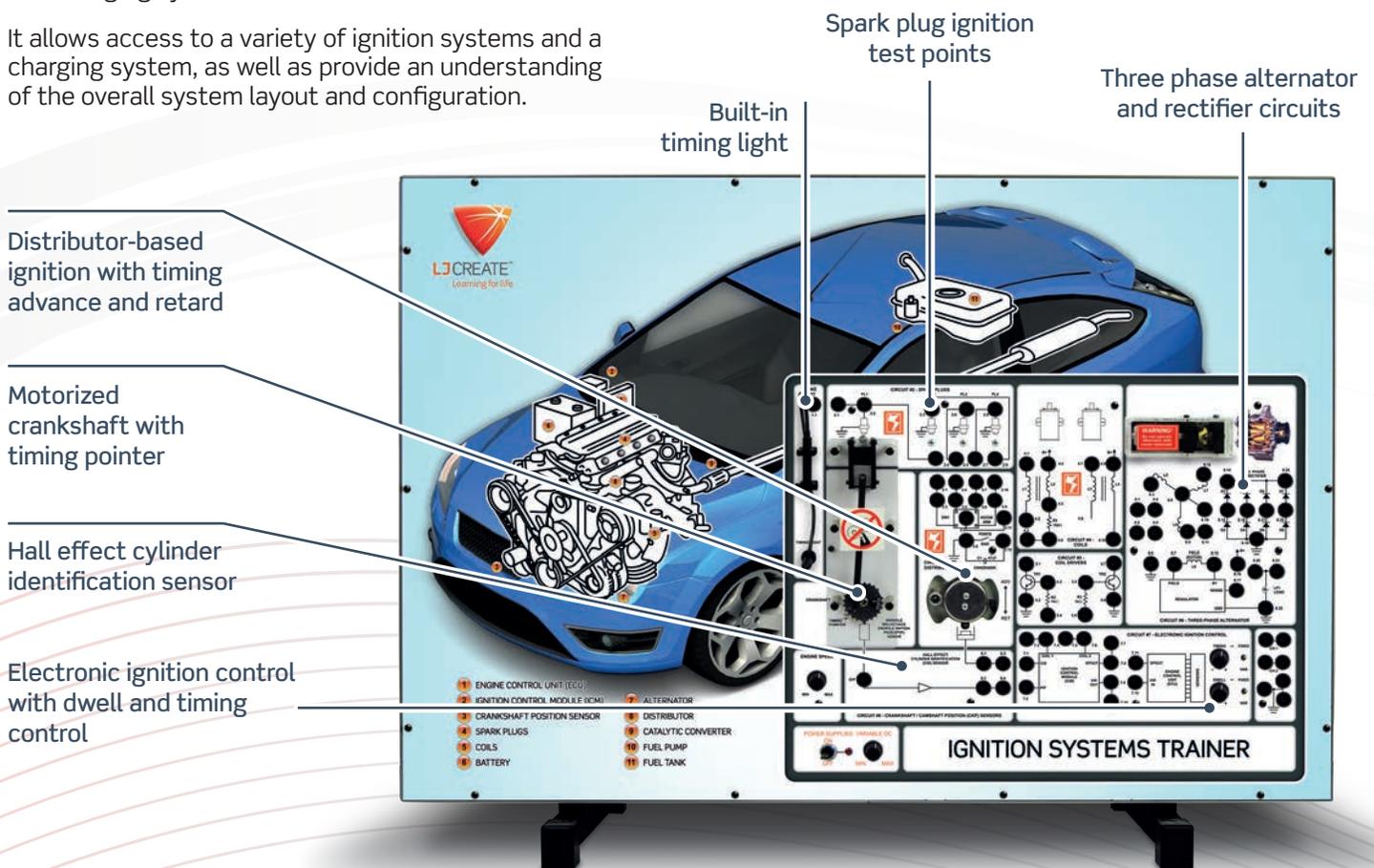
Ignition and Charging Systems Panel Trainer (750-01)

This trainer provides students and instructors with the opportunity to demonstrate, investigate, and fault-find a simulation of a typical automotive ignition and charging system.

It allows access to a variety of ignition systems and a charging system, as well as provide an understanding of the overall system layout and configuration.

Order as:

- 750-01 Ignition and Charging Systems Panel Trainer



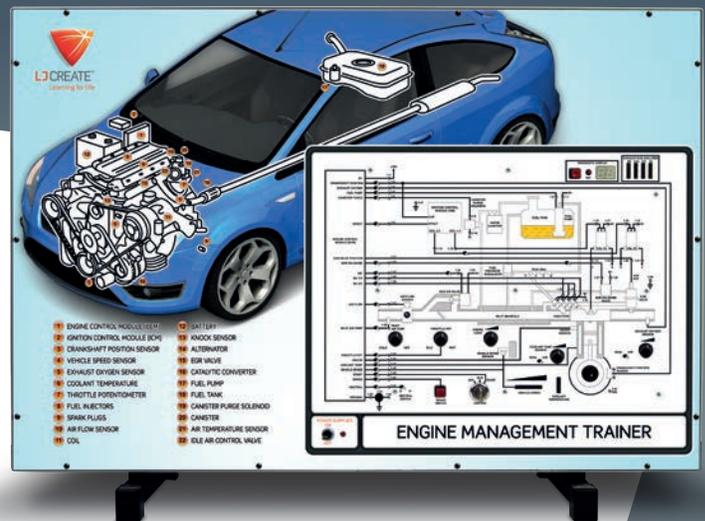
Engine Management Systems Panel Trainer (751-01)

This trainer provides students and instructors with the opportunity to demonstrate, investigate, and fault-find a simulation of a typical engine management system.

It allows access to a variety of test points for engine components and the ECU system, and provides an understanding of the overall system layout and configuration.

Order as:

- 751-01 Engine Management Systems Panel Trainer



Displays and Accessories Systems Panel Trainer (752-01)

This trainer provides students and instructors with the opportunity to demonstrate, investigate, and fault-find a simulation of typical automotive display systems.

The trainer is designed to allow access to a variety of test points for vehicle electrical components and explore how they relate to dashboard displays and warning lights.

Order as:

- 752-01 Displays and Accessories Systems Panel Trainer



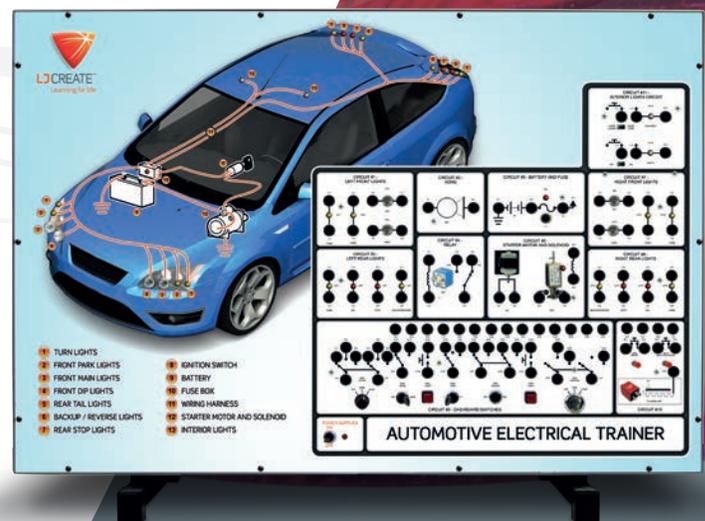
Automotive Electrics Panel Trainer (753-01)

This trainer provides students and instructors with the opportunity to demonstrate, investigate, and fault-find a simulation of typical automotive electrical systems.

The trainer is designed to allow access to a variety of test points for vehicle electrical components, as well as provide an understanding of the overall system layout and configuration.

Order as:

- 753-01 Automotive Electrics Panel Trainer



Light Vehicle Autotronics Panel Trainers

Hybrid Vehicle Systems Panel Trainer (756-01)

This trainer provides students and instructors with the opportunity to demonstrate, investigate and fault-find a simulation of a hybrid vehicle electrical system.

The trainer is designed to allow access to a simulation of the mechanical operation as well as provide a mimic of the electrical power flow.

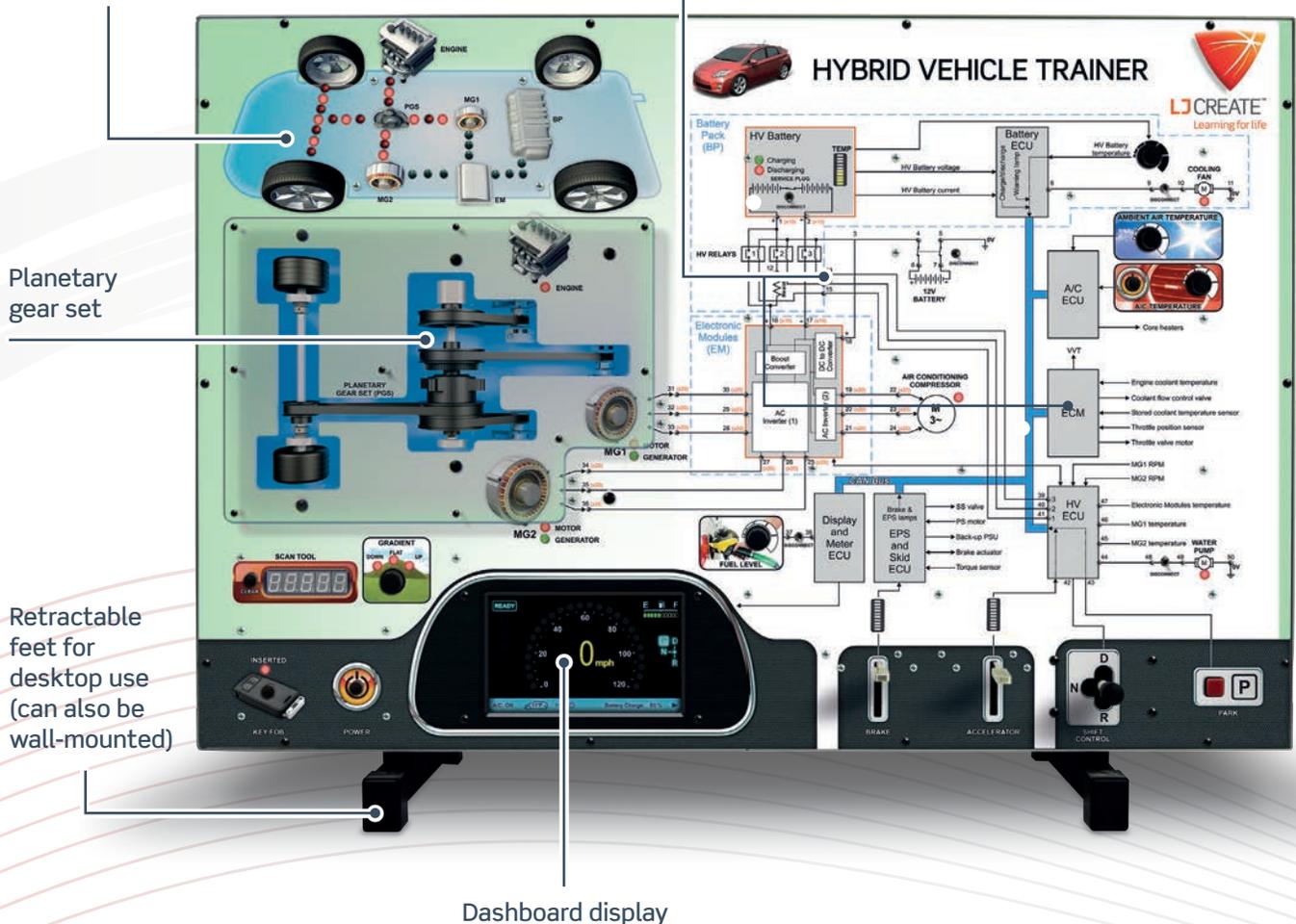
Order as:

- 756-01 Hybrid Vehicle Systems Panel Trainer

Power flow mimic allows students to investigate the balance between electrical and internal combustion power

High and Low voltage system test points

Fault insertion options to simulate real-world system malfunctions



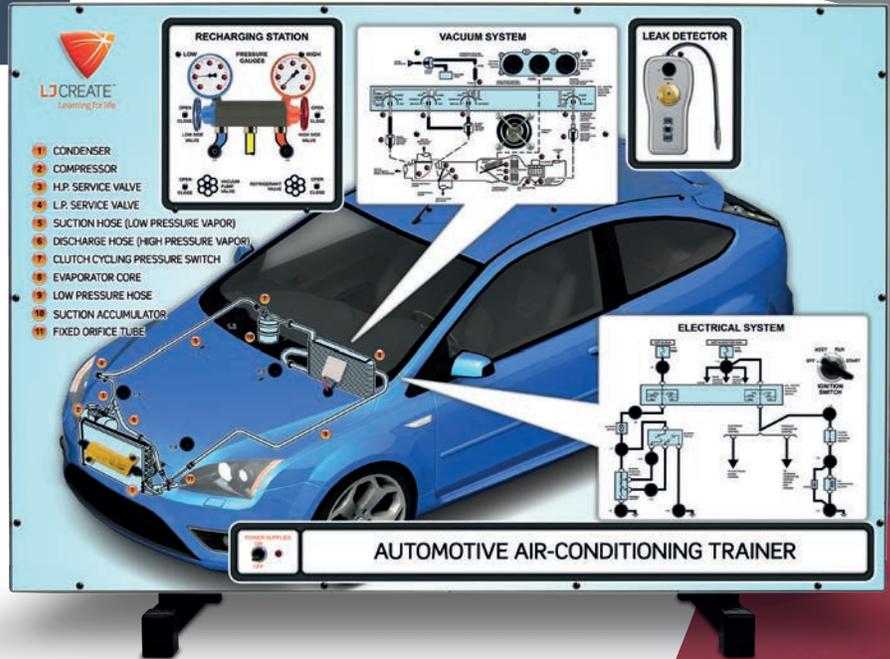
Air Conditioning Systems Panel Trainer (754-01)

This trainer provides students and instructors with the opportunity to demonstrate, investigate, and fault-find a simulation of a typical automotive air conditioning system.

The trainer is designed to allow access to controls for the vacuum system, electrical system and recharging station, as well as provide an understanding of the overall system layout and configuration.

Order as:

- 754-01 Air Conditioning Systems Panel Trainer



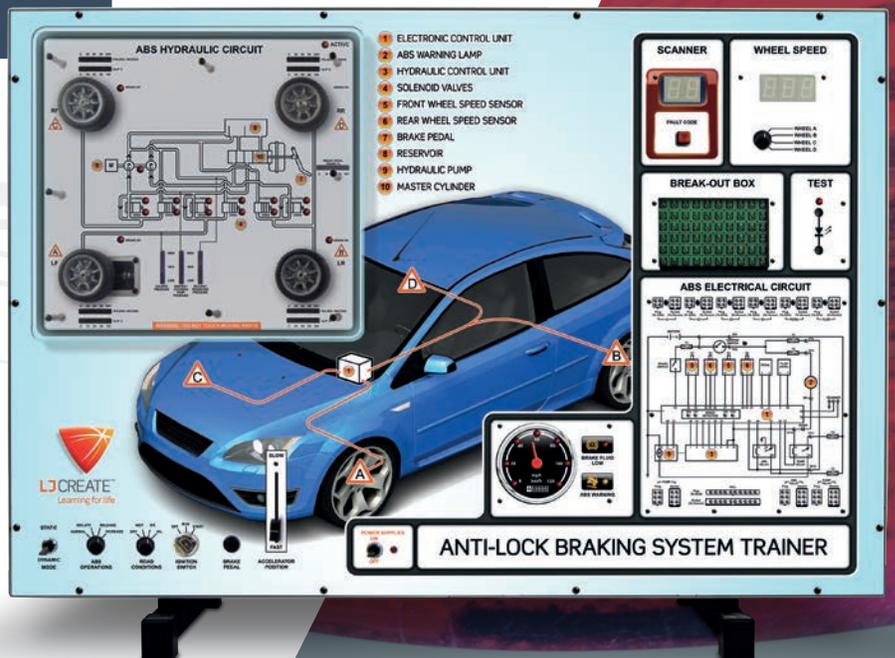
Anti-Lock Braking Systems Panel Trainer (755-01)

This trainer provides students and instructors with the opportunity to demonstrate, investigate, and fault-find a simulation of a typical 4-wheel anti-lock braking system.

The trainer is designed to demonstrate ABS hydraulic and electrical system operation, as well as provide the ability to simulate changes in road conditions that impact ABS operation.

Order as:

- 755-01 Air-Lock Braking Systems Panel Trainer



Light Vehicle System and Component Rigs

Many automotive technology concepts are best taught using **fully functioning vehicle component rigs**, where an instructor can show students a wide variety of diagnostic and maintenance techniques.

Your students are able to perform tasks on systems without the need for a complete vehicle. In some cases, this means practical tasks can also take place in the classroom.

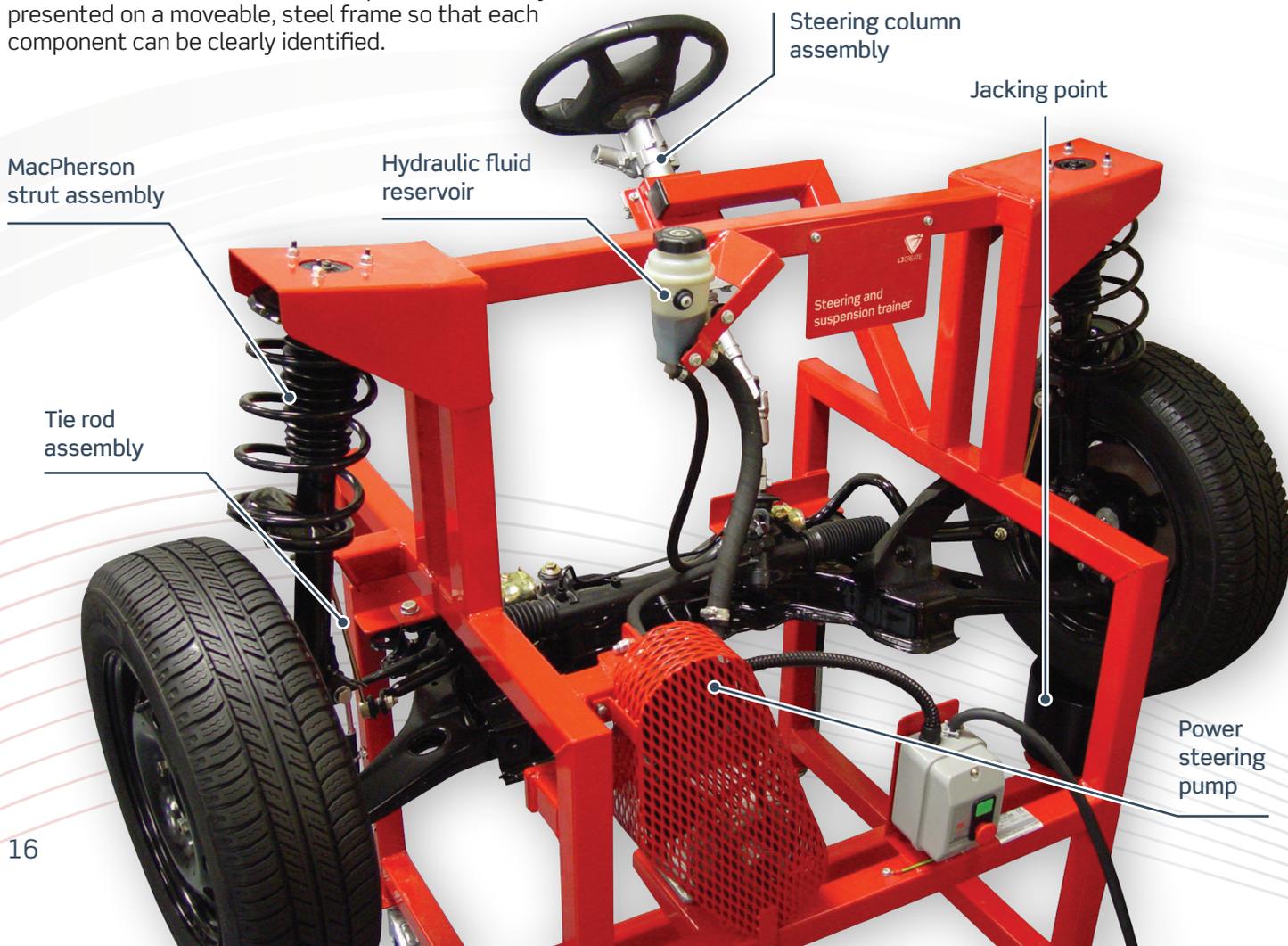
Steering and Suspension System Trainer (764-01)

This real component trainer provides the instructor with a working steering and suspension system for group or whole-class demonstration.

This includes all the individual components of the system presented on a moveable, steel frame so that each component can be clearly identified.

Order as:

- 764-01 Steering and Suspension System Trainer



NATEF Crosswalk

Do you want to find out exactly where our light vehicle hardware aligns to the NATEF tasks you need to teach? The NATEF crosswalk is for you!

Simply pull it from the centerfold, and use it to match our light vehicle equipment to the relevant NATEF tasks.

			Panel Trainers		System Rig	Sectioned Rigs			
			p. 13	p. 14	p. 21	p. 24	p. 25	p. 25	p. 25
			752-01	756-01	765-01	772-01	773-01	774-01	775-01
I. Engine Repair	MLR	AST	MAST						
	1.A.1	1.A.2	1.A.2				•	•	
	1.A.2	1.A.3	1.A.3	•					
	1.A.3	1.A.4	1.A.4				•	•	
	1.A.5	1.A.6	1.A.6				•		
		1.B.1	1.B.1				•		
		1.B.2	1.B.2				•		
		1.B.3	1.B.3				•		
	1.B.1	1.B.4	1.B.4				•		
		1.B.5	1.B.5				•		
			1.B.10				•	•	
			1.B.11				•	•	
			1.B.13				•		
			1.C.2				•	•	
			1.C.3				•	•	
			1.C.6				•		
			1.C.7			•	•	•	
			1.C.8				•	•	
			1.C.12				•	•	
			1.C.13				•		
		1.C.14				•	•		
1.C.1	1.D.1	1.D.1	•						
1.C.2	1.D.3	1.D.3				•			
	1.D.9	1.D.9	•						
	1.D.12	1.D.12	•						
II. Automatic Transmission		2.C.1	2.C.1						•
		2.C.3	2.C.3						•
	2.C.2	2.C.5	2.C.5		•				
			2.C.6						•
			2.C.13						•
			2.C.15						•
		2.C.19						•	
III. Manual Transmission		3.C.1	3.C.1					•	
			3.C.3					•	
			3.C.4					•	
			3.C.6					•	
	3.E.1	3.E.1	3.E.1					•	
			3.E.6					•	
			3.E.7					•	
			3.E.11					•	
		3.E.12					•		

NATEF Crosswalk

			Panel Trainers			System Rigs			
			p. 13	p. 13	p. 15	p. 17	p. 16	p. 23	
			751-01	752-01	755-01	763-01	764-01	784-01	
IV. Suspension and Steering	MLR	AST	MAST						
			4.A.2					•	
	4.B.8							•	
	4.A.2	4.B.1	4.B.1						•
		4.B.2	4.B.2					•	•
		4.B.3	4.B.3					•	
		4.B.5	4.B.5					•	
		4.B.6	4.B.6					•	
		4.B.7	4.B.7					•	
		4.B.8	4.B.8					•	
		4.B.9	4.B.9					•	
		4.B.10	4.B.10					•	
		4.B.11	4.B.11					•	
		4.B.17	4.B.17					•	
		4.C.6	4.C.6					•	
		4.C.10	4.C.10					•	
		4.D.1	4.D.1					•	
V. Brakes		5.A.0	5.A.1		•		•		
	5.A.1	5.A.3	5.A.3			•			
	5.B.1	5.B.2	5.B.2			•			
		5.B.10	5.B.10						
	5.B.5	5.B.11	5.B.11		•				
	5.C.1	5.C.2	5.C.2				•		
	5.C.3	5.C.4	5.C.4				•		
	5.C.5	5.C.6	5.C.6				•		
	5.D.1	5.D.2	5.D.2				•		
	5.D.2	5.D.3	5.D.3				•		
	5.D.3	5.D.4	5.D.4				•		
	5.D.4	5.D.5	5.D.5				•		
	5.D.5	5.D.6	5.D.6				•		
	5.D.6	5.D.7	5.D.7				•		
	5.F.2	5.F.3	5.F.3				•		
	5.F.4	5.F.5	5.F.5			•			
		5.G.1	5.G.1			•			
		5.G.8	•		•				



NATEF Crosswalk

	MLR	AST	MAST	Panel Trainers		System Rigs			
				p. 13	p. 13	p. 19	p. 18	p. 21	p. 21
				752-01	751-01	760-01	760-02	765-01	767-02
VIII. Engine Performance		8.A.1	8.A.1			•	•		
	8.A.1	8.A.2	8.A.2			•	•		
		8.A.3	8.A.3			•	•		
	8.A.6				•				
		8.A.9	8.A.9			•	•		
		8.A.10	8.A.10	•	•				
	8.B.1	8.B.1	8.B.1		•				
		8.B.3	8.B.3			•	•		
			8.B.5			•	•		•
			8.B.6			•	•		
			8.B.7	•		•	•		•
		8.C.1	8.C.1			•	•	•	•
		8.C.2	8.C.2					•	
		8.C.3	8.C.3			•			
			8.D.1			•	•		•
		8.D.2	8.D.3			•	•		•
	8.C.2	8.D.4	8.D.5				•		
		8.D.6	8.D.7		•	•	•		•
		8.D.7	8.D.8			•			
		8.E.5	8.E.8		•				



Gasoline Engine Trainer (761-01)

This trainer provides the instructor with a complete working engine with an engine management system for group or whole-class demonstration.

It is mounted on a moveable, heavy-duty, steel frame. The system comprises all the elements that control the air-fuel ratio, the ignition timing, and the exhaust emissions together with the ECU and all the sensors and actuators associated with the control system.

Order as:

- 761-01 Gasoline Engine Trainer



Common Rail Diesel Engine (CAN Control) Trainer (762-01)

This trainer provides the instructor with a complete common rail diesel engine with an engine management system for group or whole-class demonstration.

It comprises all the elements that control the injector timing and the exhaust emissions together with the ECU and all the sensors and actuators associated with the control system.

Order as:

- 762-01 Common Rail Diesel Engine (CAN Control) Trainer



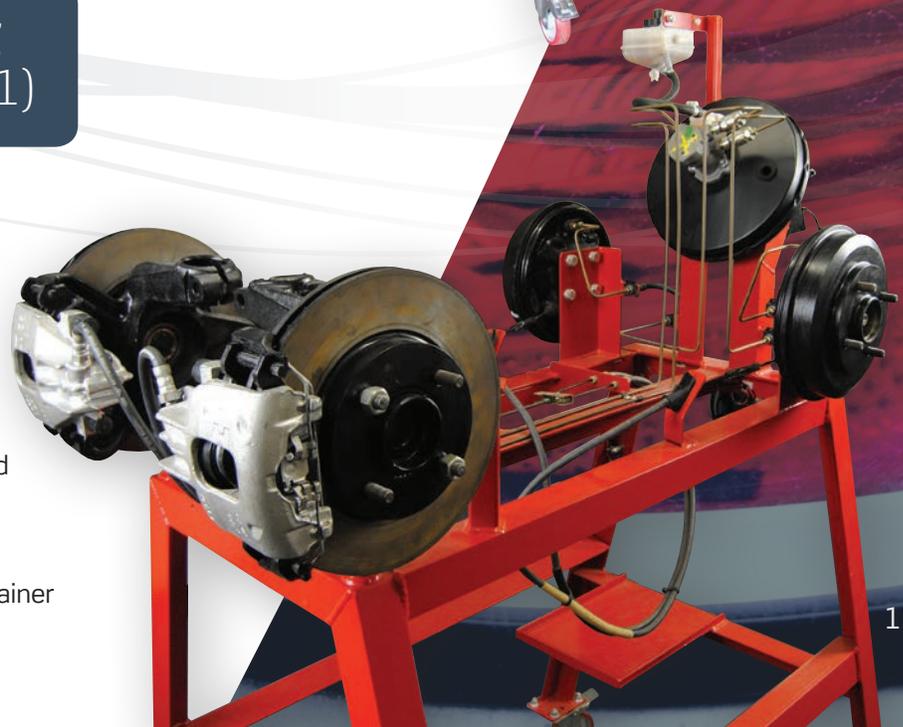
Disc and Drum Braking System Trainer (763-01)

This real component-based trainer provides students and instructors with the opportunity to demonstrate and investigate the operation of a typical automotive braking system.

The trainer is designed to allow access to disc and drum brake components, as well as providing the opportunity to understand the operation of the hydraulic circuit.

Order as:

- 763-01 Disc and Drum Braking System Trainer



Light Vehicle System and Component Rigs

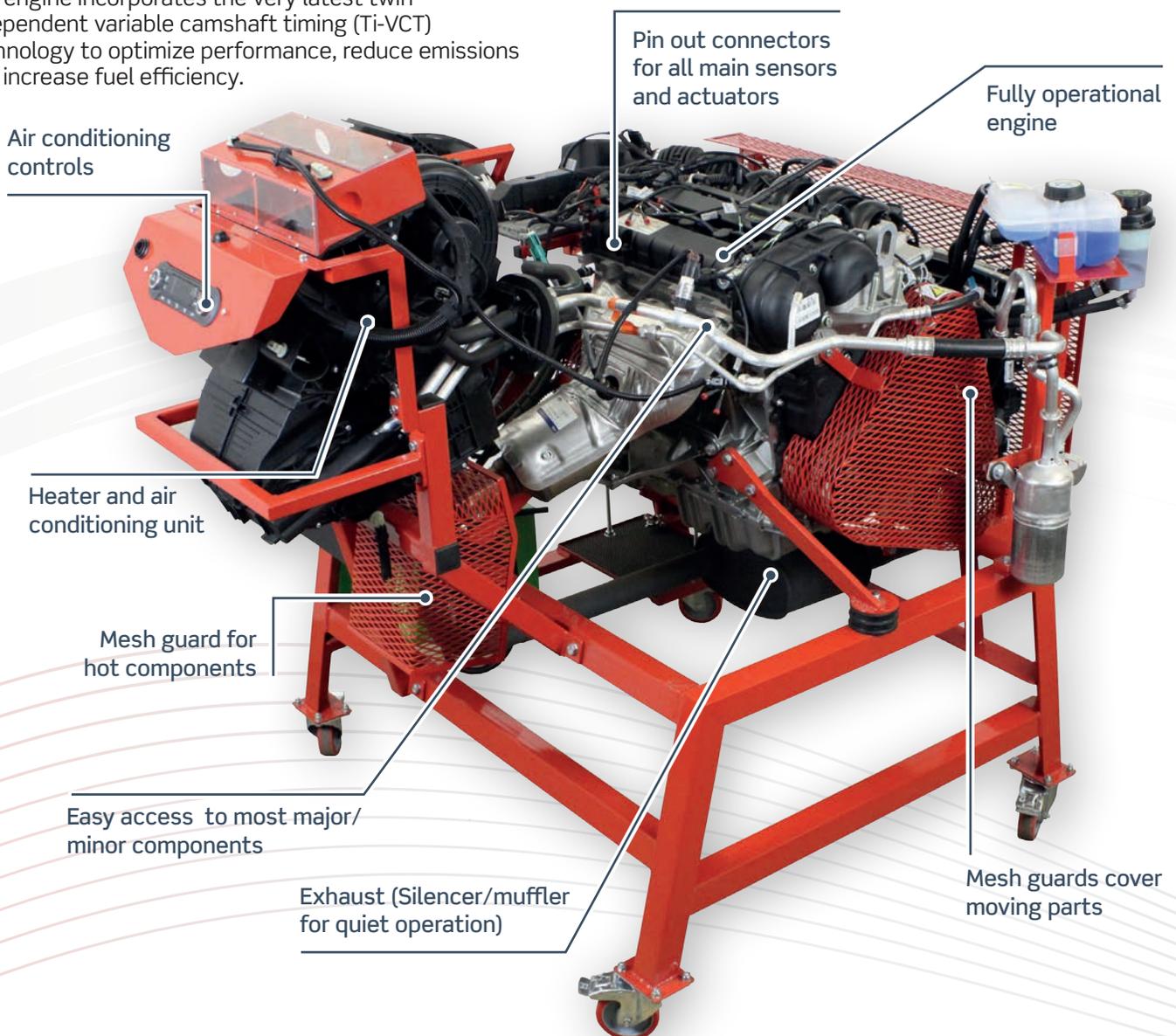
Gasoline Engine (CAN and Climate Control) Trainer (760-02)

This trainer provides a complete working engine with an engine management system incorporating CAN bus control technology. It also includes a fully-functional climate control system for group or whole-class demos.

The engine incorporates the very latest twin independent variable camshaft timing (Ti-VCT) technology to optimize performance, reduce emissions and increase fuel efficiency.

Order as:

- 760-02 Gasoline Engine (CAN and Climate Control) Trainer



Gasoline Engine (CAN Control) Trainer (760-01)

This trainer provides a complete working engine with an engine management system incorporating CAN bus control technology.

The engine incorporates the very latest twin independent variable camshaft timing (Ti-VCT) technology to optimize performance, reduce emissions and increase fuel efficiency.

Order as:

- 760-01 Gasoline Engine (CAN Control) Trainer



Air-Conditioning System Trainer (766-01)

This real component-based trainer provides students and instructors with the opportunity to demonstrate and investigate the operation of a functional automotive air conditioning system.

The trainer is designed to allow access to the vacuum system and electrical system, as well as provide the opportunity to understand the processes involved with system evacuation and charging.

Order as:

- 766-01 Air-Conditioning System Trainer



Light Vehicle System and Component Rigs

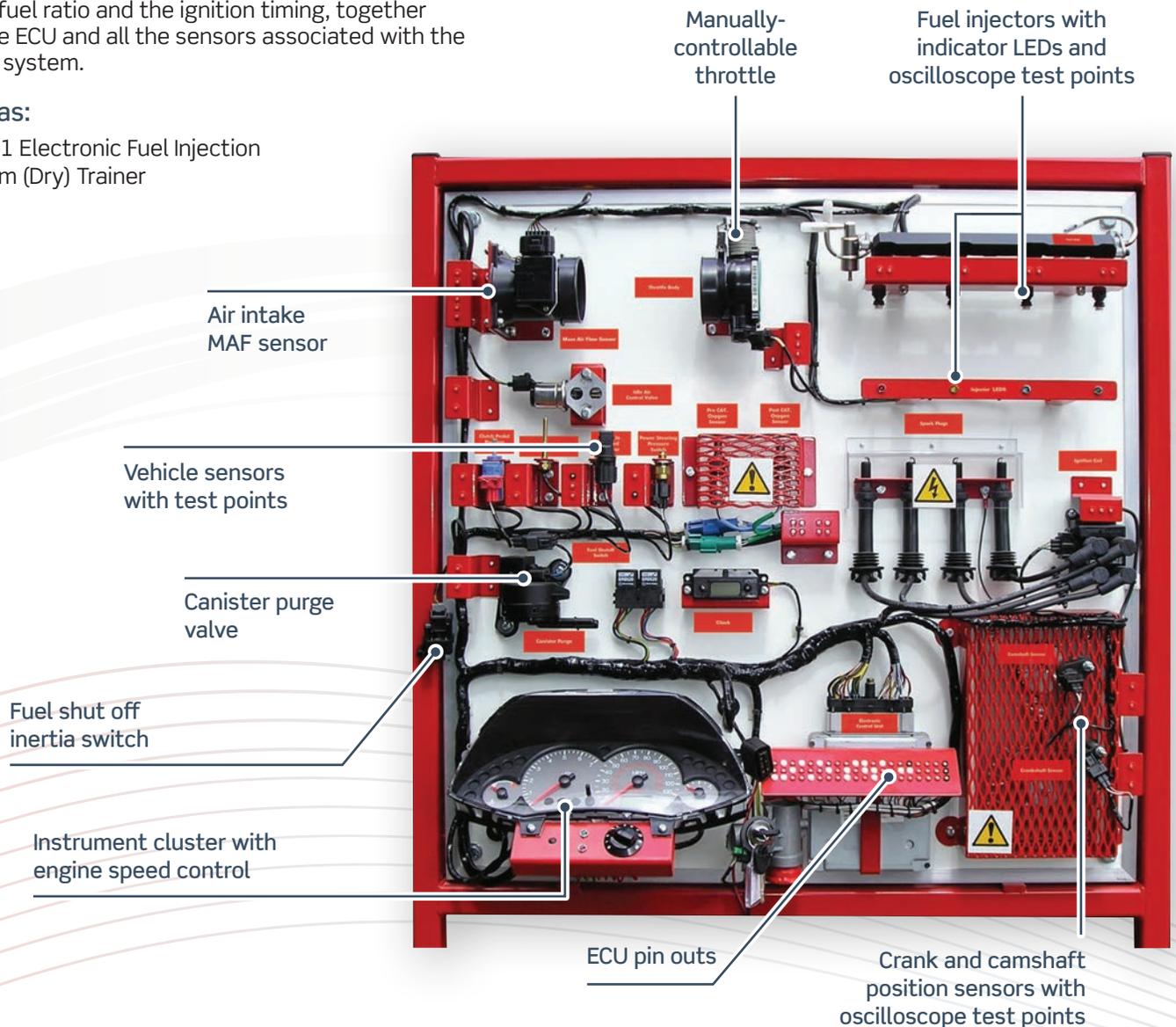
Electronic Fuel Injection System (Dry) Trainer (767-01)

This real component trainer provides the instructor with a working multi-point fuel injection system for group or whole-class demonstration.

The system comprises all the elements that control the air-fuel ratio and the ignition timing, together with the ECU and all the sensors associated with the control system.

Order as:

- 767-01 Electronic Fuel Injection System (Dry) Trainer



Distributorless Ignition System Trainer (765-01)

This real component trainer provides the instructor with a working distributorless ignition system for group or whole-class demonstration.

This includes all the individual components of the system presented on a steel turret so that each component can be clearly identified.

Order as:

- 765-01 Distributorless Ignition System Trainer



Electronic Fuel Injection System (Wet) Trainer (767-02)

This real component trainer provides the instructor with a working multi-point fuel injection system for group or whole-class demonstration.

The system comprises all the elements that control the air-fuel ratio and the ignition timing, together with the ECU and all the sensors associated with the control system.

Order as:

- 767-02 Electronic Fuel Injection System (Wet) Trainer



Anti-Lock Braking System (Bosch) Trainer (769-01)

This trainer will provide the instructor with a simulated anti-lock braking system for group or whole-class demonstration, using components from a commercial ABS.

The system will demonstrate the basic principles of ABS, including wheel speed sensing, signal processing, fluid pressure and modulation, together with brake pressure measurement.

Order as:

- 769-01 Anti-Lock Braking System (Bosch) Trainer



Light Vehicle System and Component Rigs

Vehicle Electrical System Trainer (770-01)

This real component trainer offers a fully operational automotive electrical system designed for teaching basic electrical principles.

Investigations and demonstrations allow students to acquire an understanding of how simple electrical circuit theory is key to developing sound automotive fault-finding techniques.

Full operation of headlights, side lights, brake lights, indicators, and alternator via a speed controller can be observed.

Order as:

- 770-01 Vehicle Electrical System Trainer



HDI Common Rail Fuel Injection System Trainer (771-01)

This real component trainer provides the instructor with a working HDI common rail fuel injection system for group or whole-class demonstration.

The system comprises all the elements that control the air-fuel ratio, the injectors, the ECU, and all the sensors associated with the control system.

Order as:

- 771-01 HDI Common Rail Fuel Injection System Trainer



Supplemental Restraint System Trainer (784-01)

This trainer comprises real vehicle components that have been made safe for a classroom or shop environment, using charges that have either been pre-deployed or replaced with safe replica charges.

The components have been carefully sectioned and dismantled to show students the various elements that make up the system.

Order as:

- 784-01 Supplemental Restraint System Trainer



Light Vehicle Sectioned Component Rigs

Exposing the inner workings of components provides a safe and accessible way of viewing how complex systems are constructed - **key components are color-coded for easy identification.**

Our cut-aways are fitted with hand cranks to enable students and teachers to see how components interact with each other to create a fully working system. These sectioned rigs are ideal for classroom demonstrations, or you could use them in the shop as a handy reference for students.

Sectioned 4-Cylinder Gasoline Engine Trainer (772-01)

This trainer provides the instructor with a complete 4-cylinder gasoline engine for group or whole-class demonstration. Mounted on a movable, heavy-duty steel frame.

The engine is operated by hand and is sectioned so that all moving parts can be seen, and the way they interact can be observed.

Order as:

- 772-01 Sectioned 4-Cylinder Gasoline Engine Trainer

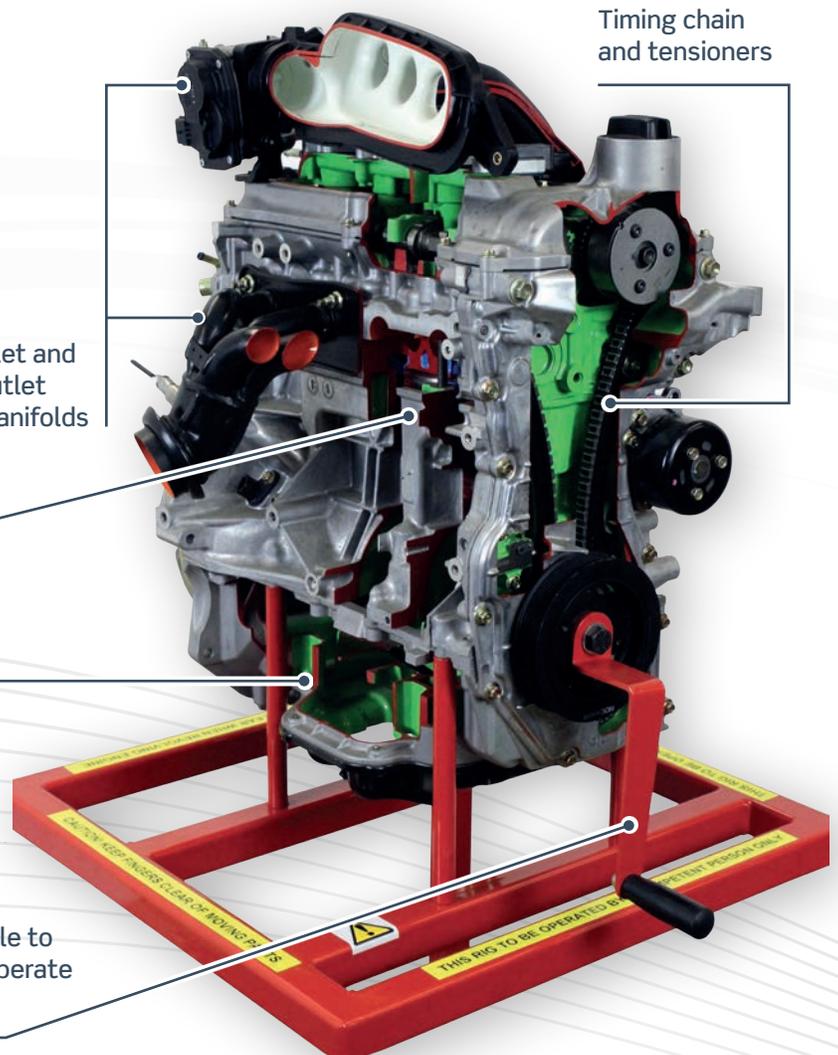
Cross-sectioned cylinder to show operation of piston and valves

Color-coded sections to show inlet, exhaust, oil, and water pathways

Crank handle to manually operate engine

Inlet and outlet manifolds

Timing chain and tensioners



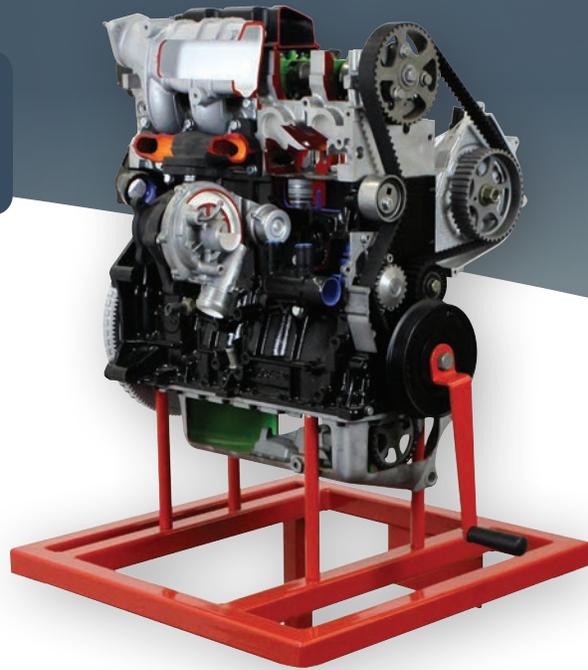
Sectioned Diesel Engine (Common Rail) Trainer (773-01)

This trainer provides the instructor with a complete 4-cylinder diesel engine for group or whole-class demonstration, mounted on a movable, heavy-duty steel frame.

The engine is operated by hand and is sectioned so that all moving parts can be seen and the way they interact can be observed.

Order as:

- 773-01 Sectioned Diesel Engine (Common Rail) Trainer



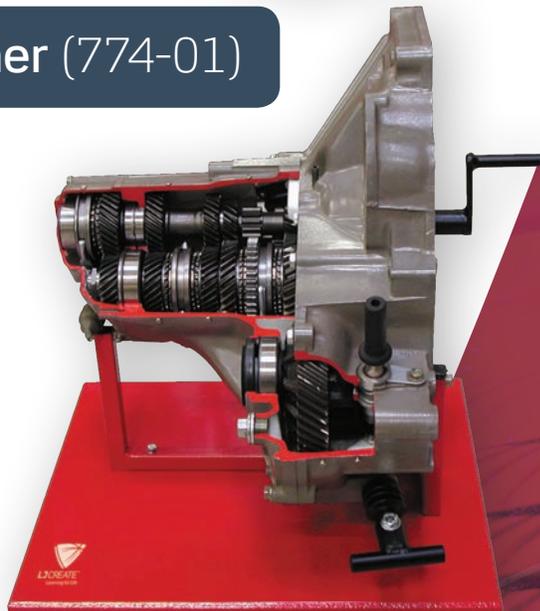
Sectioned Manual Gearbox Trainer (774-01)

This trainer provides the instructor with a complete manual gearbox for group or whole-class demonstration, mounted on a steel plate for use on a shop bench or classroom desk.

The gearbox is operated by hand and is sectioned so that all moving components can be seen and the way they interact can be observed.

Order as:

- 774-01 Sectioned Manual Gearbox Trainer



Sectioned Automatic Gearbox Trainer (775-01)

This trainer provides the instructor with a complete automatic gearbox for group or whole-class demonstration, mounted on a steel plate for use on a shop bench or classroom desk.

The gearbox is operated by hand and is sectioned so that all moving components can be seen and the way they interact can be observed.

Order as:

- 775-01 Sectioned Automatic Gearbox Trainer



Medium/Heavy Vehicle System and Component Rigs

6-Cylinder Truck Diesel Engine (Common Rail) Trainer (776-01/6C)

This trainer provides the instructor with a complete working 6-cylinder heavy vehicle diesel engine with a Bosch EDC engine management system and high-pressure common rail fuel injection system. The trainer is mounted on a moveable, heavy-duty steel frame.

Trainer enables demonstration of the following:

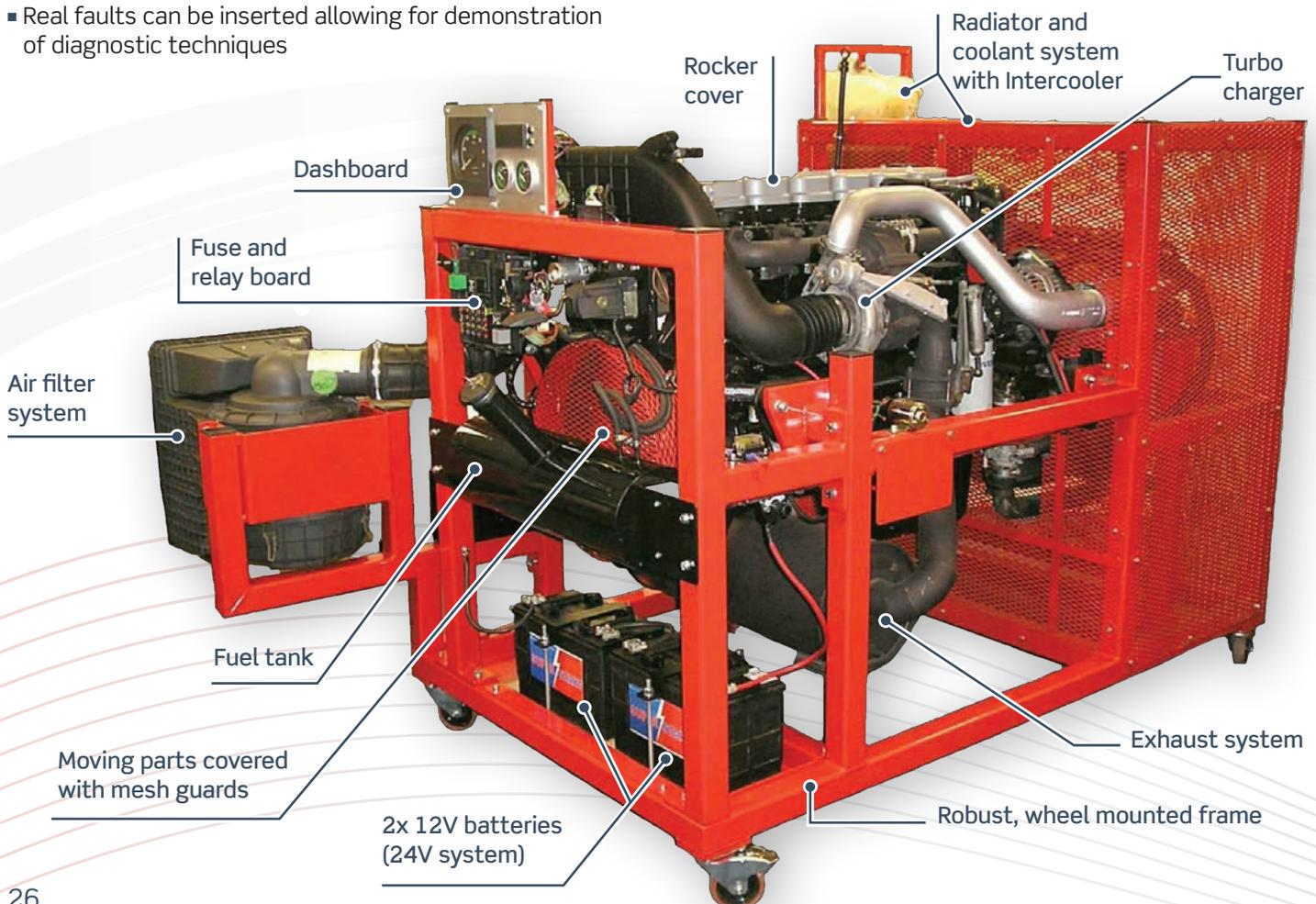
- The position and mounting of all engine components
- Engine management system fundamentals
- Sensor and actuator components
- Real faults can be inserted allowing for demonstration of diagnostic techniques

Order as:

- 776-01/6C 6-Cylinder Truck Diesel Engine (Common Rail) Trainer

Also available:

- 776-01 4-Cylinder Truck Diesel Engine (Common Rail) Trainer
- 776-04/6C 6-Cylinder Truck Diesel Engine (Tier 4/EPA 2010) Trainer



Air Brake Tractor/Trailer System Trainer (778-01)

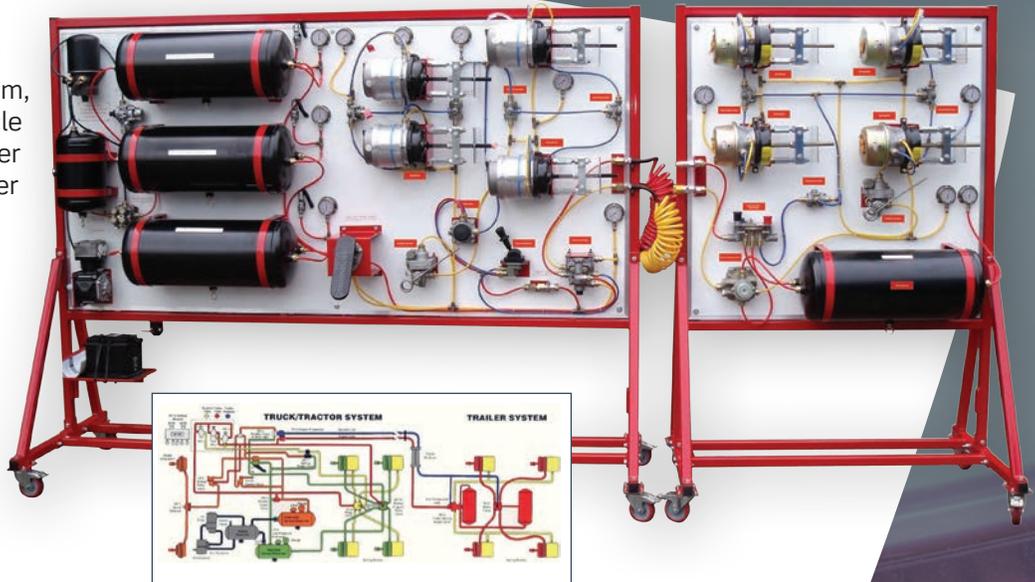
This comprehensive, panel-mounted system provides a fully operational 2-line air brake system, as fitted to a typical heavy vehicle tractor and trailer unit. The trainer features quick-fit connectors over the whole board.

Order as:

- 778-01 Air Brake Tractor/Trailer System Trainer

Also available:

- 778-02 Air Brake Tractor/Trailer System Trainer with ABS
- 778-03 Air Brake Tractor/Trailer System Trainer with EBS



24 Volt Electrical System Trainer



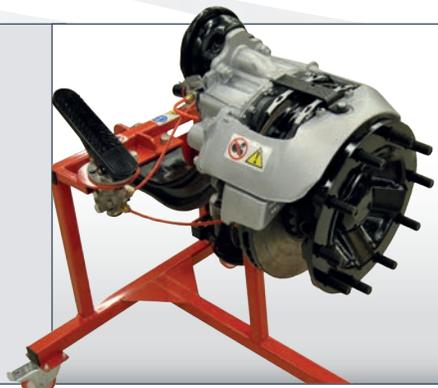
Order as: 770-02

Electronic Controlled Air Suspension Trainer



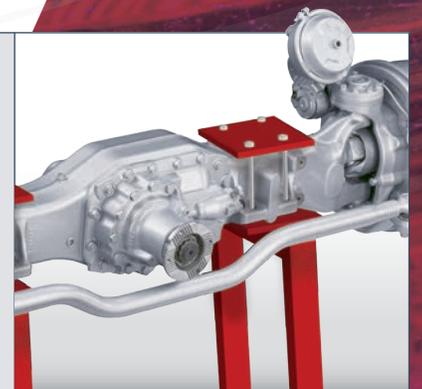
Order as:
777-01

Disc Air Brake Trainer



Order as: 778-04

Live Front Axle with Air Disc Brake Assembly



Order as: 785-01

Medium/Heavy Vehicle System and Component Rigs

Sectioned Truck Gearbox Trainer (780-01)

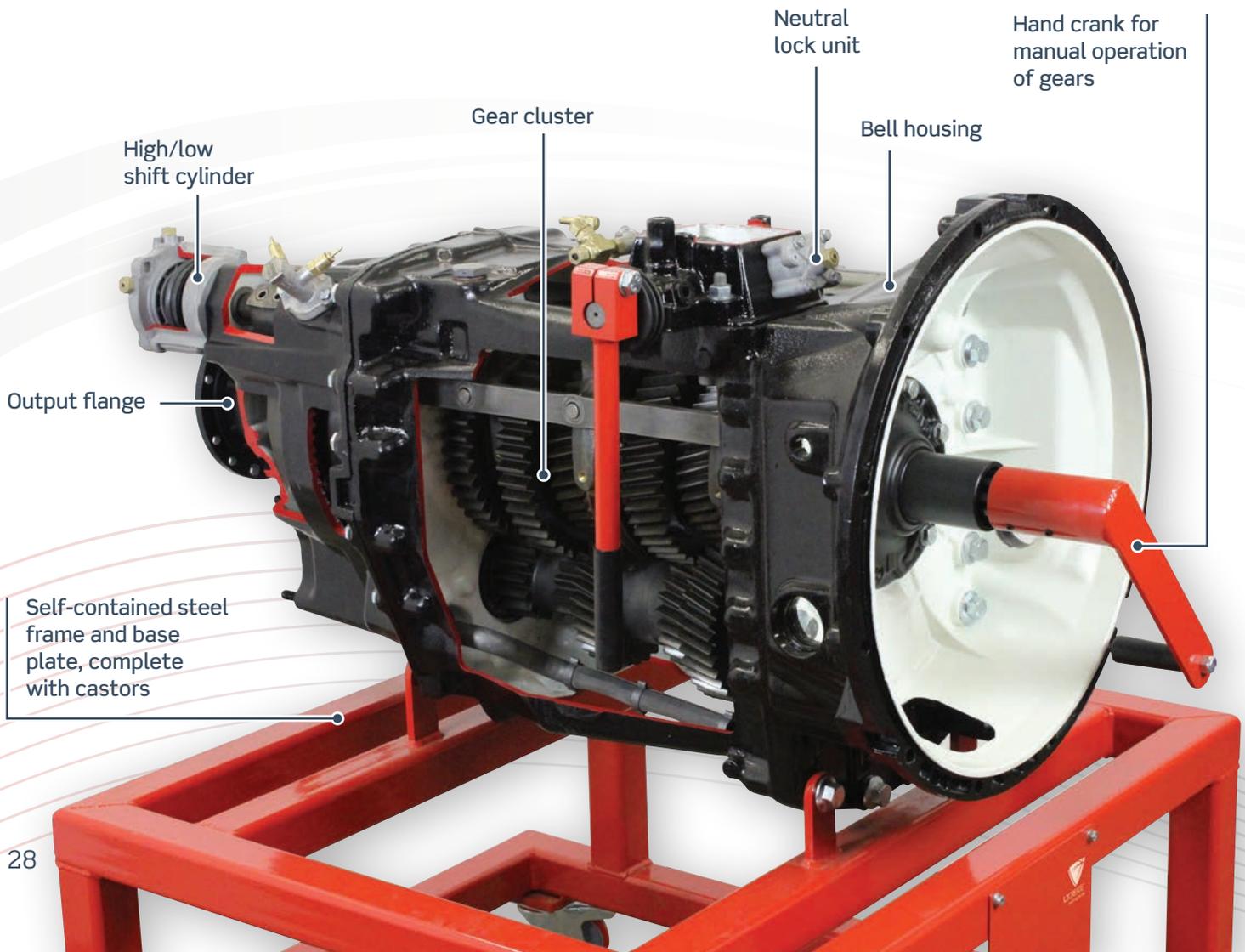
This trainer provides the instructor with a fully sectioned truck gearbox for group or whole-class demonstration. The trainer is mounted on a self-contained steel frame and base plate, complete with castors.

Order as:

- 780-01 Sectioned Truck Gearbox Trainer

Typical practical tasks and topics include:

- Identification of main gearbox mechanical components
- Operation of gearbox and reduction components
- Identification of crawler range components
- Identification of synchro hubs



Sectioned Truck Rear Axle (with Reduction Hubs) Trainer (781-01)

This trainer provides the instructor with a fully sectioned truck rear axle, for group or whole-class demonstration. The trainer is mounted on a self-contained steel frame and base plate, complete with castors.

Order as:

- 781-01 Sectioned Truck Rear Axle (with Reduction Hubs) Trainer



Four Wheel Drive Sectioned Gearbox

Order as: 786-01



Sectioned Truck Diesel Engine (6-Cylinder) Trainer (779-01/6C)

This trainer provides the instructor with a fully sectioned 6-cylinder truck diesel engine for group or whole-class demonstration.

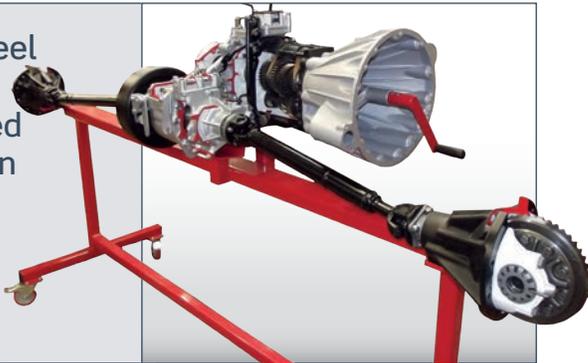
Order as:

- 779-01/6C Sectioned Truck Diesel Engine (6-Cylinder) Trainer



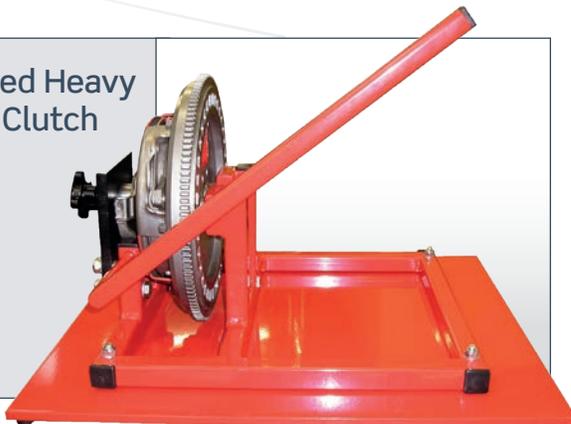
Four Wheel Drive Sectioned Drivetrain

Order as: 786-02



Sectioned Heavy Vehicle Clutch

Order as: 787-01



Also available:

- 779-01 Sectioned Truck Diesel Engine (4-Cylinder) Trainer

4-cylinder version shown

Medium/Heavy Vehicle Autotronics Panel Trainers

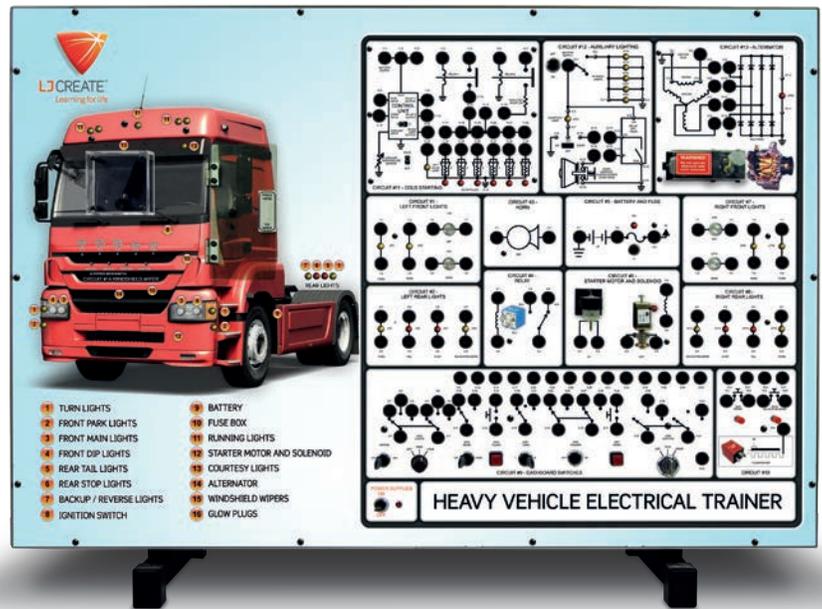
Heavy Vehicle Electrical Systems Panel Trainer (757-01)

This trainer provides students and instructors with the opportunity to demonstrate, investigate and fault-find a simulation of typical diesel electrical systems.

The trainer is designed to allow access to a variety of test points for vehicle electrical components, as well as provide an understanding of the overall system layout.

Order as:

- 757-01 Heavy Vehicle Electrical Systems Panel Trainer



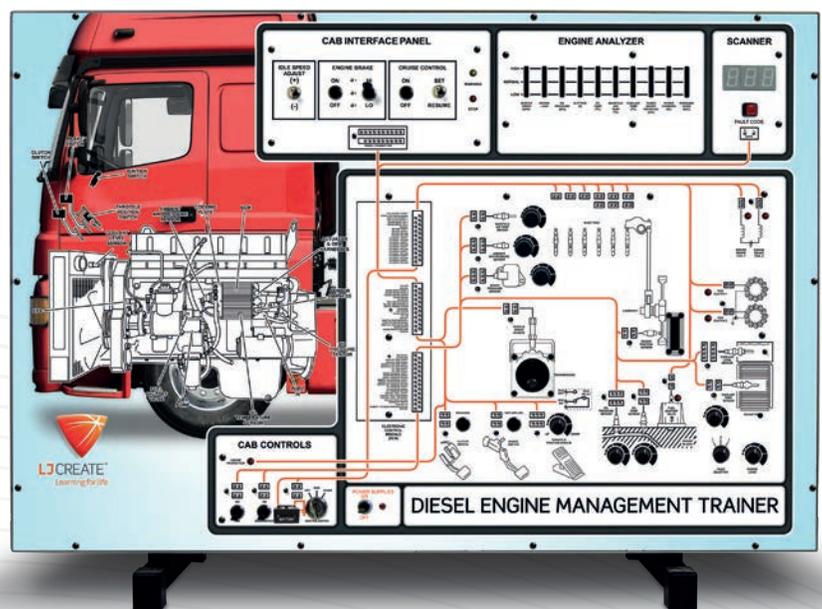
Diesel Engine Management Systems Panel Trainer (758-01)

This trainer provides students and instructors with the opportunity to demonstrate, investigate, and fault-find a simulation of typical diesel engine management systems.

The trainer is designed to allow access to a variety of test points for vehicle electrical components, as well as provide an understanding of the overall system layout.

Order as:

- 758-01 Diesel Engine Management Systems Panel Trainer



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