



Educational products for Automotive Training

2018 Guide

www.exxotest.com



EXXOTEST®
EDUCATION

Air conditioning | Electrical & hybride systems | ABS ESP | Battery charging and testing | Injection | Engine environment | ECUs, sensors and actuators
Engines for training | Multiplexed networks | Basic electrics | Bodywork | Rolling chassis | Measurements & diagnostics | Acquisition software

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An important player in the automotive training & teaching market, **EXXOTEST** designs and markets fully French **training solutions**.

Our products are as close to the real thing as possible, and are designed to support **technical training** across the industry.

Our team of technical representatives is highly active across the international markets and we are at your service should you require a **demonstration** of any of our products. We can also **deliver, install and maintain** any of your new purchases.

Please feel free to contact us, it will be our pleasure to respond !

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AIR CONDITIONING

MT-C5001

Model based on genuine **ECU** taken from a **production vehicle**, driving a fully simulated, adjustable, **regulated air conditioning system**.

Interactive displaying of air conditioning functioning inside the **passenger compartment** and in the **engine bay**. **Measure, analyse and apply diagnostics** methods.



MT-C5001*

MT-C5002

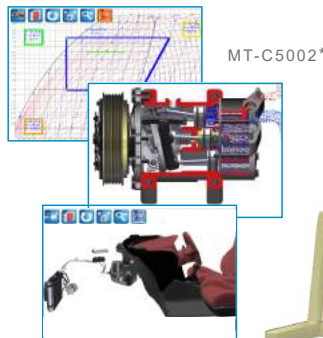
An innovative teaching aid, the **MT-C5002** uses **3D technology** to explain, in detail, the complexities of **regulated vehicle air conditioning systems**.

The two touch-screens give easy access to a wide range of **interactive displays** showing different aspects of the subject being studied:

- State and pressure changes
- Mixes and distribution
- Operational flow diagram
- Mollier diagram
- Breakdowns simulation
- Physical measurement terminals



* Optional mobile workbench, see page 8



MT-C5002*



MT-C7001

This "miniature" vehicle **HFO-1234yf** air conditioning system circuit will help you visualise, discover and study a compact **genuine cooling circuit**.

- Variable capacity compressor
- Condenser, evaporator
- Dryer filter
- Expansion valve



MT-C7001

Using your air conditioning HFO-1234yf service re-fill station (fluid recovery, vacuum pump, refilling) take temperature **readings** from various points along the circuit, **efficiency testing**, etc.

EXXOCLIM 3

This **professional tool**, widely used by manufacturers' networks, improves the **speed** of your **readings** and the **accuracy** of your diagnostics on both **vehicles** and your **MT-C7001** model!

Automatic measurements, test and diagnostics with a printed customer report: EXXOCLIM is the richest solution on the market today, and the best adapted to a wide range of users' profiles!



EXXOCLIM3

ELECTRICAL AND HYBRID SYSTEMS

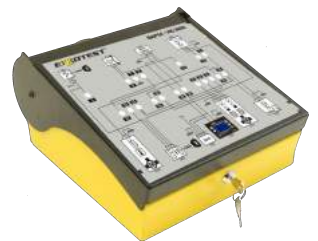
HE-3000

A real electric vehicle by **EXXOTEST** the HE-3000 is fitted with **instrumentation** and **completely safe**. Perfectly adapted to **teaching purposes**, this vehicle is ideal for risk-free preparation for **electrical autorisations** (Std: UTE C 18-550).

- Energy Recovery System on braking
- 3-phase asynchronous motor - 48V 4kW
- Configurable electronic speed controller
- Diagnostics tools and software provided
- 48V / 12V transformer
- CAN network (software supplied)
- Integrated breakdown unit



HE-3000



HE-3001

Based on the HE-3000, the HE-3001 is an alternative, fitted with a **lithium battery pack**.

- Integrated Battery Management System (BMS)
- Information & safety instructions for the use of lithium batteries



HE-3001

KIT-EPC-EPI

Equipment for both **collective and personal protection** (as per Std: UTE C 18-550), supplied with both electric vehicles (HE-3000&HE-3001).

It can be also supplied separately under Reference **KIT-EPC-EPI**.

Includes the following components:

- Set of 6 posts, with base sockets, chains and warning signs
- Latex insulated gloves
- Water resistant overgloves
- Face mask
- Voltage tester



HE-3020-SG

Designed specifically for studies of **hybrid technologies**, this teaching aid simulates a **diesel engine** linked to an **electrical propulsion system** and **alternator-starter** motor.

Road tests, normally impossible in an educational establishment, are simple with the HE-3020-SG. The readings make it easy to carry out a comparative study of different drive systems. The two touch-screens give easy access to a wide range of **interactive 3D displays** for detailed analyses:

- Various operating modes (auto, sport, 4-wheels drive & zero emissions)
- Several possible road types (free test zone, urban driving, up and down gradients, etc.)
- Various possible measurements, using a voltmeter or an oscilloscope plugged to the physical measurement terminal block (alternator-starter motor and electric motor phases, calculator, Hall effect sensors, CAN network, etc.)
- Recording, graph tracing and analysis of data generated by the simulator from your PC, running the REFLET software (supplied), connected to the model's USB port!

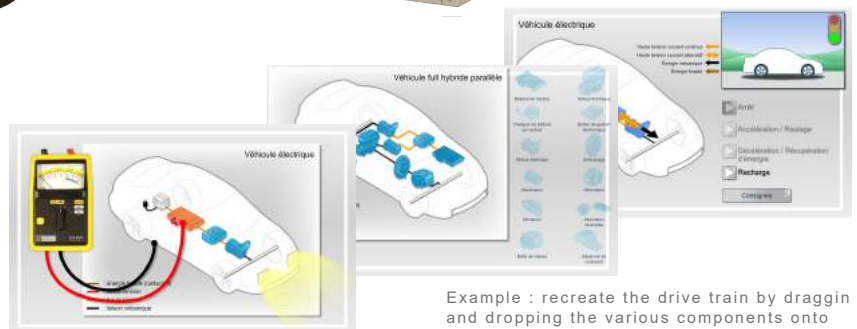
To **widen the study** range and improve users' understanding, a variety of **multimedia** products are optionally provided with the model:

- 18 interactive presentations of electric and hybrid systems
- 1 animated film of the currently available hybrid and electric solutions
- 1 'Serious Game' preparing the user for electrical autorisations (UTE C 18-550)



Road profile visualization and selection (mountains, city, etc.)

Real time 3D display of traction chain and specific data.



ABS ESP

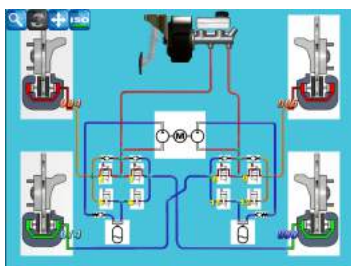
MT-ESP1000

The **3D MT-ESP1000 simulator** is designed for studies & analyses of vehicle behavior in term of the various on-board systems. This model can be used to simulate **road tests** with the following systems turned on/or off:

- **ABS** (anti-lock braking system)
- **ASR** (anti-slip regulation)
- **ESP** (steering regulation)

The **two touch-screens** display high quality images and give easy access to the parameters and the various operating modes:

- **Weather conditions:** rain, snow, etc.
- **Routes, logging, etc.**
- **Real time display of hydraulic unit**



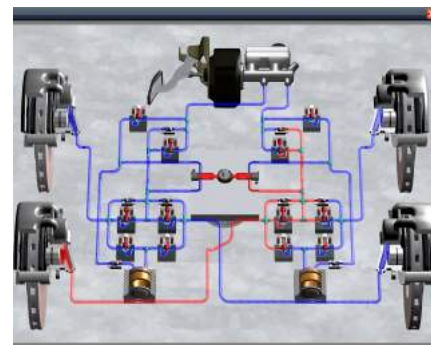
MT-ESP1000

Real vehicle components used to control the vehicle (instrument panel, steering wheel, brake & accelerator pedals).

An **output terminal block** gives easy access to the solenoid signals; wheel sensors; CAN network, etc.



* Optional mobile workbench, see page 8



Example screenshots: parameter graphs, 3D interactive view of the system being studied.

DTP-ABS1000

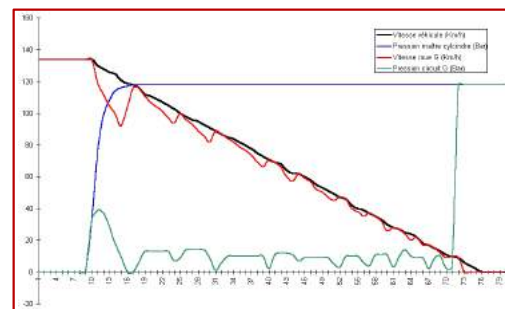
The **DTP-ABS1000** teaching console shows the brake **circuits and pressures**, the **triggering of actuators, wheelspin**, etc.

Vehicle speed and wheel traction levels can be set, braking behaviour simulation based upon these parameters.

The unit is fitted with terminals for ECU inputs & outputs (voltmeter or oscilloscope readings).



DTP-ABS1000



Braking sequences can be recorded for **step-by-step read-back** via the console or a PC, using the ABSCom software supplied. This can be used to **analyse** the tests (graphs, printouts and logs).

BATTERY CHARGING AND TESTING

MT-4002V

Ideal for teaching the vehicle's **basic electrical circuits**, the **MT-4002V** includes a **starter motor**, **alternator** and a **diesel pre-post heating** circuit

The circuits are linked to signal measurement panels, in the form of electrical wiring diagrams.

An electric motor and speed controller drives the alternator and consumers (current measurement, Ohm's law, etc.).



MT-4002V*

Internal or external wiring with the ability to **create breakdowns**.



Rear view: battery & charger, electric drive motor

The **MT-4002V** is supplied with a **charger / starter controller**: the **MI250-L**. A **diagnostics tool** used widely by manufacturers, it can be used to study and test the model and can also be used on a **real vehicle**: making it easy to **transfer lessons** learnt on the model to a real vehicle.

DT-M008

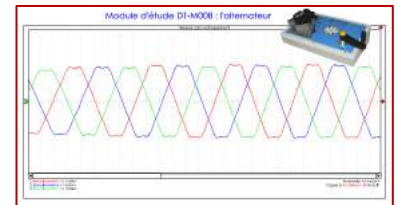
This module details the alternator: allowing the analysis of the **transformation of mechanical energy** into AC then DC electricity.

- Choice of wiring: **'star'** or **'delta'** with or without **bridge rectifier** (diodes rectifier bridge).



DT-M008

* Optional mobile workbench, see page 8



Example of oscilloscope readout (REFLET)

MI250-L et MI250S-L

Professionnal tools used by car manufacturers to test 12V **charging**, **starting** and **pre-heating** circuits.

- Battery voltage measurement
- Output or absorbed battery current reading
- Leakage current indications (> 30 mA)



MI250-L



MI250S-L

In addition to the functions of the **MI250-L**, the **MI250S-L**, has a **memory backup**.

TCHA-P25A-L / TCHA-10A-L

Developed to ensure a constant load **TCHA-xxx** will maintain batteries in their optimal operating state.

- **TCHA-P25A-L** : 12 V, 25 A
- **TCHA-10A-L** : 12 V, 10 A



TCHA-10A-L



TCHA-P25A-L

INJECTION

MT-H9000

A model of a **Direct Common Rail Turbo Diesel** engine, the **MT-H9000** makes it possible to study & analyse systems realistically and look for breakdowns, using the integrated Breakdown Box and the professional diagnostics tool (CL550-L) supplied with the **MT-H9000** (See product details on page 19).

The **HDI ECU I/O** signals can be accessed from the front panel and, as on a real vehicle, the **diagnostic sockets** allows you to:

- Read off and delete faults
- Read off injection parameters



The central control panel lets you adjust and display the principal parameters :

- Engine speed
- Accelerator position
- Inlet air flow
- Rail pressure
- Temperatures, etc.

MT-H9000 *

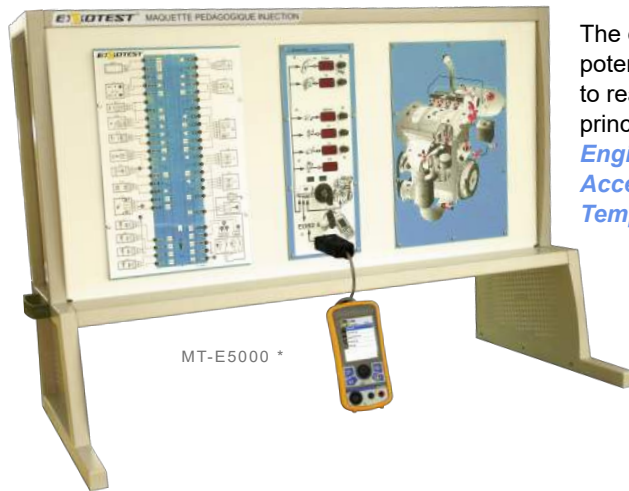
The full system diagram (right hand panel) uses lights to show the various functions: **air & diesel circuits, actuators**, etc.

MT-E5000

A teaching tool to help study and analyse a **phased sequential fuel injection petrol engine**, fitted with motorised valves and an EOBDII diagnostics socket.

The integrated **Breakdown Box** on **MT-E5000** means it can also be used to train users to look for breakdowns.

The **CL550**, a **professional diagnostics** and **measurement** tool, is supplied with the **MT-E5000** (See product details on page 19).



The displays and potentiometers allow you to read off and set the principal parameters:

- Engine speed**,
- Accelerator position**,
- Temperatures, etc.**

MT-E5000 *

DTP2000M

For studies and analyses of **multi-point injection** petrol engines, the **DTP2000M** has connections for multimeters and oscilloscopes, recording signals from **sensors** and **actuators**..

- A Breakdown box, on the back of model, can be used to teach diagnostics methods.



DTP2000M

Easy and quick to set up !

* MT-TABLE



This mobile workbench is built to the exact dimensions of the following models:

- MT-C5001, MT-C5002, MT-ESP1000, HE3020-SG, MT-4002V, MT-H9000 and MT-E5000.**

ENGINE ENVIRONMENT

MT-TELE

Study and understand operations carried out with **diagnostic tools**:

- Download internal ECU software
- Key programming
- Remote vehicle option coding
- Reading off parameters, reading and deleting fault codes

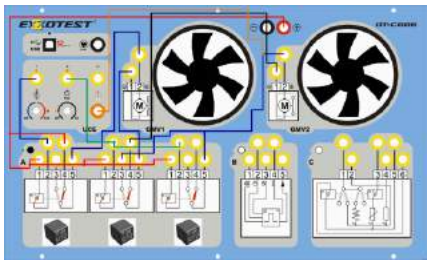


MT-TELE

DT-C006

Analyses of the functioning of a **fan motor unit**:

- Measurement of I/O signals from the various components
- Reading from three relay diagrams & wiring (fitted in series / parallel)
- Diagnostics



DT-C006



MT-BVR

Designed to show a **semi-automatic (robotised) MT-BVR gearbox** - all components come from a vehicle in the PSA range:

- In-vehicle multi-purpose display (BVR-specific display)
- Diagnostics socket
- Ignition key, 'auto' button and speed control lever.

An electric motor is used to drive the gearbox up to the required speeds.

Integrated **Breakdown Box** with connector terminals for **BVR ECU I/Os**.



MT-BVR

Boîte de vitesses robotisée

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MT-BVR

Boîte de vitesses robotisée

ECUs SENSORS AND ACTUATORS

DT-E001

This module is designed for studies of **data processing** as carried out by the **ECUs** fitted to modern vehicles.

The **DT-E001** highlights the various types of control and strategy. It can be used alone or with the following **sensors & actuators modules**:

- **DT-M001**, steering wheel angle & controls
- **DT-M002**, accelerator, ride height (analog & digital)
- **DT-M003**, wheel speed
- **DT-M004**, inlet air flow rate
- **DT-M006**, engine speed and positioning
- **DT-C002**, ignition & injection (petrol & diesel)
- **DT-C003**, air flow regulator, EGR valve, motorised throttle valve
- **DT-C005**, idler actuator, headlamp adjustment, passenger compartment air recycling

DT-M002

For the study & analysis of **positions sensor** using real components :

- Accelerator pedal
- Redundant brake contactor
- Ride height sensors

DT-M003

For the study & analysis of a **speed sensor** using real components :

- Wheel bearings with integrated magnetic target and magneto-resistive sensor

DT-M004

For the study & analysis of **inlet air characteristics** using real components

- Air temperature sensor
- Air pressure sensor
- Air flow meter



DT-E001

OBJECTIVES :

- Analysis of **sensor** signals, followed by **analog/digital conversion**
- Data exchanges between ECUs, **multiplexing with binary/hexadecimal conversion**
- Data processing and **actuator control (D-A conversion)**
- Feedback measurements, **regulation loop**
- **Electrical wiring** diagram studies
- Systems **diagnostics** methods

DT-M002



DT-M003



DT-M004



Easy and quick to set up!

DT-M006

For the study & analysis of **positions & engine speed** sensors using real components:

- Inductive flywheel sensor
- Hall effect camshaft sensor
- Magneto-resistive crankshaft sensor

DT-M006



DT-C002

For the study & analysis of **injection/ignition** systems using real components:

- Petrol injector (electro-magnetic)
- Diesel injector (piezoelectrical)
- Ignition coil (with sparkplug)

DT-C002



DT-C003

For the study & analysis of **PWM engine controls** using real components:

- EGR valve
- Air flow regulator (EGR management)
- Motorised throttle valve

DT-C003



DT-C005

For the study & analysis of **stepping motor controls** using real components:

- Idle control
- Passenger compartment air recycling motor
- Headlamp adjustments

DT-C005



DT-C001

For the study & analysis of **electric motors** using real components:

- Window winder motor
- Rear view mirror motor
- Rear view mirror and window winder motor controls

DT-C001



DT-C004

For the study & analysis of **door locks** using real components:

- Door lock
- Boot lock
- Fuel filler flap lock

DT-C004



ENGINES FOR TRAINING

MT-MOTEUR

These **new** engines are fitted into a **robust**, mobile frame making them **easy to move**.

They are fitted with **instruments** and **secured** by EXXOTEST.

Perfect for **training** purposes, fitted with **real components**, just like a production vehicle:

- Injection & Engine Management Systems
- Fuel supply: pump and submersible tank level gauge with level indicator
- Cooling system with radiator fitted to the front of the frame, fans and expansion tank
- Original wiring loom

The control panel includes the following components:

- Ignition key with electric hood control
- Emergency stop button
- Electronic accelerator control lever
- Instrument panel: rev counter, water temperature, fuel level, warning lights and timer clock
- High resolution display to show engine data from the CAN network
- Diagnostics socket



The advantages of the product:

- The electrical supply is inside an **enclosed casing** containing the **battery** and its **automatic charger**.
- The hinged transparent cover is fitted with piston cylinders and electrically locked to provide **maximum security** (in respect of European Directives).
- A liquid containment tray is fitted to protect against leaks and handling errors.



Engine control panel with custom laminated diagram (A3)

Supplied with a **professional multifunction** tool:

The CL550 is supplied with each engine, this digital controller includes, in single device, an EOBD II scantool (reading and deleting faults, parameter codes, etc.); a 2-tracks oscilloscope; a voltmeter and an ammeter (details on page 19).



CL550

MT-MOTEUR-D-BSI

1.4 HDi 70hp Diesel engine :

- *Direct Common Rail injection (Bosch EDC16 C34)*
- *Turbocharged engine (DV4TD)*

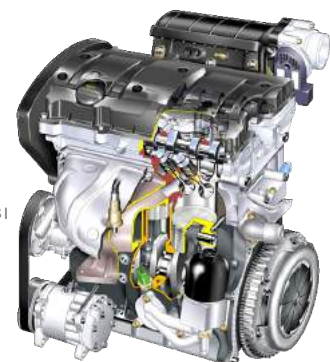


MT-MOTEUR-D-BSI

MT-MOTEUR-E-BSI

1.6 16V 120hp petrol engine :

- *Indirect sequentially phased injection (Bosch ME 7.4.5)*
- *16 valves PSA engine (TU5JP4) with motorised throttle valve, upstream & downstream oxygen sensors, etc.*



MT-MOTEUR-E-BSI

MT-MOTEUR-DFAP-BSI

1.6 8V HDi 92hp Diesel engine

- Direct Common Rail injection (Continental SID 807)
- Turbocharged engine (DV6C) with particle filter (DPF)

MT-MOTEUR-ADBLUE

1.6 8V 115hp HDI Diesel engine

- Direct Common Rail injection (Bosch EDC17C60)
- Turbocharged engine (DV6F) with SRC System

MT-MOTEUR-IDT200

1.6 16V 200hp THP petrol engine

- Direct phased sequential injection
- Variable inlet valve timing
- PSA engine (EP6FDTX)

MT-MOTEUR-E3CT

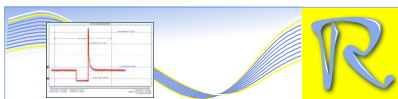
1.2 12V 130hp THP petrol engine

- Direct injection
- PSA engine (EB2DTS), 3 cylinders, 12 valves

Options for MT-MOTEUR

The optional **Breakdown Box** and EXXOTEST connectors are indispensable for **readings** and **diagnostics** onto the engines: if you are not yet equipped, we have the perfect pack for your engine!

Optional **REFLET** software
ideal for MT-MOTEUR !



Measures, analyses and records
all the signals from your engine!



MT-MOTEUR-DFAP-BSI

MT-MOTEUR-ADBLUE

Euro 6



MT-MOTEUR-IDT200

Euro 6



New !

MT-MOTEUR-E3CT

Euro 6



BM-PACK-ED
BM-PACK-DFAP
BM-PACK-EVIDTE3C



BAP-PACK-DFAP
BAP-PACK-ED
BAP-PACK-EVIDTE3C



REFLET8

Complete descriptions of the Breakdown Box on - Page 20, of Measurement connectors on - Page 21 and of REFLET software on - Page 22.

MULTIPLEXED NETWORKS

MT-CAN-LIN-BSI

This teaching model uses *real components* and is designed for training on multiplexed wiring networks *CAN High Speed, CAN Low Speed, LIN*

- Integrated Breakdown Box and laminated A3 electrical wiring diagram
- Xenon headlamp technology, servo-controlled headlamp positioning and adjustment
- Supplied with USB-MUX-4C4L unit and software, designed for network data acquisition



MT-CAN-LIN-BSI



USB-MUX-4C4L-L

(See description on Page 23)

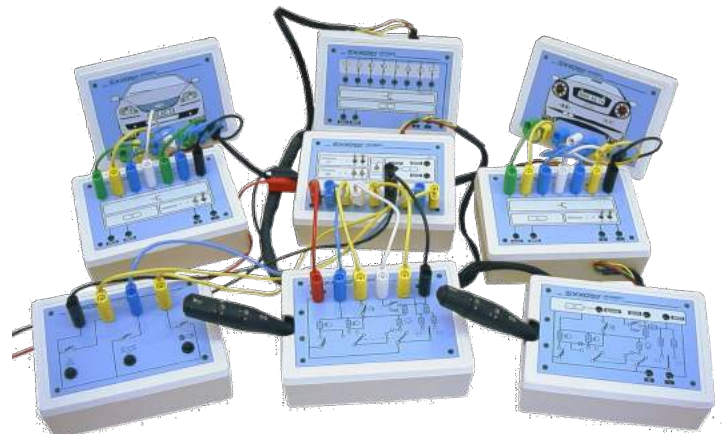


MUXTRACE

DTM-MUX8000

Set of 9 modules:
'Basics of Multiplexing'

Essential for introductory training on communication networks, the DTM-MUX8000 uses 'teaching' units, which are easy to observe and understand!



DTM-MUX8000

DT-M010

For the study & analysis of the **multiplexed networks** on modern vehicles.

- High Speed CAN Network - Inter Systems - 500 kbit/s
- Low Speed CAN Network - Comfort and Bodywork Systems - 125 kbit/s
- LIN Network - Windscreen wipers and Adaptive headlamps - 19,2 kbit/s

The model includes a Breakdown Box behind a locked hatch. The bus rate can be slowed to allow the signals to be displayed and decoded.



DT-M010

- Analysis of signals (binary and hexadecimal)
- Use of libraries in the decoding of signals
- Diagnostics and interpretation of bus failures

DT-M001

Used to study and analyse the **steering wheel angle sensor** and **wheel-mounted controls**, using real components:

- Multiplexed lighting/ wiper controls & wheel angle sensor



USB-MUXDIAGII

- USB-MUXDIAGII unit supplied with the DT-M001. To connect your PC to the network using a USB cable (see details on Page 23)



DT-M001

- PC-compatible software is provided for direct link to the CAN HS & LS networks, displaying lighting, windscreen wiper and steering wheel rotation angle data.

CVX200

A multi-brand **multiplexed network** controller, the CVX200 can be used to fully and rapidly inspect the physical status of a network :

- Highlighting short circuits and breaks in the circuit
- Testing power supplies and earth
- Indicating the communications status of the network being tested
- Displaying fitted or missing ECUs (PSA vehicles only)



CVX200-L

- CAN High Speed (terminal resistance test)
- CAN Low Speed
- VAN Comfort & Bodywork

BASIC ELECTRICS

DT-M005

Used to teach the **basics of electricity**:

- Simple readings of standard electrical units: voltage, current and resistance (U, I & R)
- Create circuits in series or parallel (bulbs, resistors)
- Wire a relay

Optional:

The GI3000-L, frequency/ cyclic ratio simulator, used to supply a bulb with a PWM (Pulse Width Modulation) feed, giving a single bulb two functions: **brake light & rear light !**



- Power supply, bulbs, resistors, relays and connecting cables all supplied
- GI3000-L available as an option (see details - Page 19)

DTM7000

Set of 10 modules covering **lighting and signaling**.

DTM7000 used to accurately recreate vehicle circuits.

- Studying the various sub-assemblies (fuses, selector switches, relays, etc.)
- Application of the electrical laws (Ohms law, etc.)



DTM7020

A set of 5 modules using **real components**, designed to recreate the electrical circuits of a **windscreen wiper motor**.

- Steering wheel-mounted control, regulator fuses, electric motor, contact switch
- Study of components, wiring, automatic return system



DTM7030

The DTM7030 is made up for **lighting, indicator & tow-bar socket** modules, with two wiring looms: DIN & Multicon.

- An understanding of wiring
- Repairing tow-bar sockets
- Measurement terminal block connections supplied



MT-VRC-C3

This teaching aid use **real components** to present a **central locking system** as fitted to a vehicle.

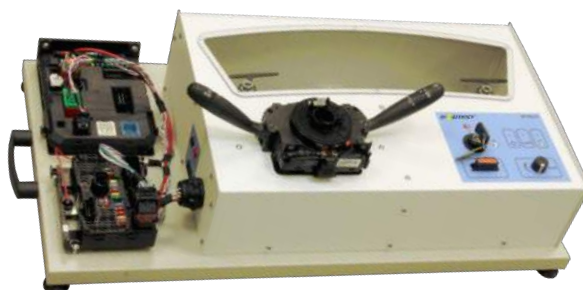
- Acces to all locking mechanisms for realistic, complete use of the system.
- Connects to diagnostics tool (not supplied) for actuator test and **key programming**



MT-EG-C3

The **MT-EG-C3** model uses **real components** fitted to the **windscreen wiper** system on a modern car.

- Study & analysis of mechanical and electrical functions
- Use of a diagnostics tool (not supplied)



DT-C001

For the study & analysis of **electric motors** using real components:

- Window winder motor
- Rear view mirror motor
- Rear view mirror and window winder motor controls



DT-C004

For the study & analysis of **door locks** using real components:

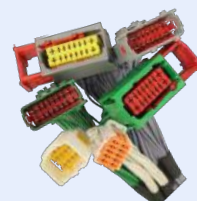
- Door lock
- Boot lock
- Fuel filler flap lock



BM-PACK-xxx



To go further still, **measurement terminals** for all these models are available as an option (see Page 21)



BM-PACK-VRC-C3
(Connectors 10W White, 10W Black, 16W Grey, 16W Green, 40W Black, White & Blue)

BM-PACK-EG-C3
(Connectors 10W White, 16W Green, 40W Black)

ROLLING CHASSIS

MT-TWINGO

Designed to provide a complete study of all **angles on the running gear** on a vehicle.

- It is easy to see various angles (no bodywork)
- All angles can be changed
- Easy to use with your test station (selecting Twingo as the reference vehicle)
- The model has the same dimensions as a Twingo, but can be folded away for rapid, practical workshop storage



MT-TWINGO

MT-DAE

This model is used to teach about **electrical power steering**, using **real components** from a production vehicle.

- Multi-disk adjustable brake at the end of the rack simulating the resistance of the wheels against the ground
- A force sensor measuring the assistance given by the electric motor
- Breakdown Box built into the model
- Compatible with diagnostics tool (not supplied) via an OBD socket



MT-DAE

MT-HD-10

Running gear **angles test** system, simple & efficient, a better, more visual training aid than fully computerised workstations, which are often said to be too highly automated.

- Test and set parallelism, castor angle, bodywork & pivot point
- Ideal complement to MT-TWINGO



MT-HD-10

MT-HD-30

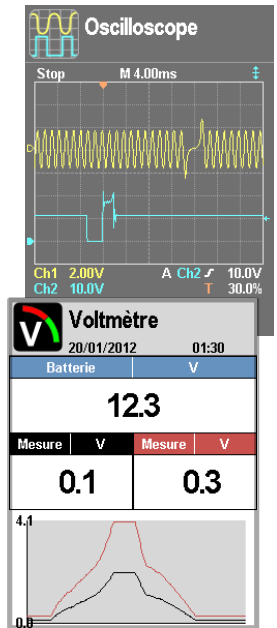
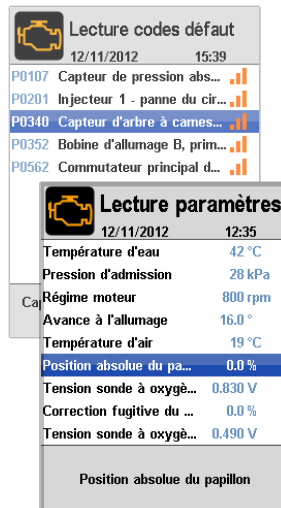
Identical to the MT-HD10 but adapted for use on **industrial vehicles**.

MEASUREMENTS AND DIAGNOSTICS

CL550

The CL550 vehicle controller includes, in a single unit, all the **diagnostics and measurement** functions needed:

- 2-trace oscilloscope
- 2-input voltmeter
- EOBDII fault and parameter reader
- Ammeter (clamp not supplied)
- USB connection, for internet updates, video projection & printouts of readings



GI3000

Professional tool used to test vehicle **sensors and actuators**. To do this, it measures then simulates the various signals:

- Voltage readings, 0-16 V and simulation 0-5 V
- Frequency readings, 1-500 Hz and simulation 10-500 Hz
- Cyclic ratio readings (PWM) 1-99 % and simulation 5-95 %



GI3000

Professional tools, see:

- [EXXOCLIM3](#) - Page 3
- [MI250S](#) - Page 7
- [CVX200](#) - Page 15

MX100

Multimeter designed for diagnostics of vehicle electrical systems, the MX100 can test the quality of vehicle **power supplies and earths**:

- Voltmeter function with battery voltage display (reference)
- **Differential voltmeter** function (from battery voltage)
- **Line resistance** search
- Ammeter function (clamp not supplied)



MX100

Our professional tools are all supplied with cases, manuals and accessories.

RV1020B

A professional tool, the RV1020B **resistive sensor simulator** replaces a CTN, CTP or fuel gauge sensor.

- Displays simulated resistance
- Variable setting from 18Ω to 40 kΩ



RV1020B



MEASUREMENTS AND DIAGNOSTICS

BAP54C and BAP108C

The Breakdown Boxes are used to create **simulations** and **breakdown readings**.

- Easy access to ECU's whilst preserving the integrity of the vehicle
- The use of the Breakdown Box depends on the wiring loom; all ECUs, on all types of vehicle, are compatible
- The Breakdown Box is fitted to the circuit to be studied (in series), the circuit continues to operate identically, but all ECU I/O signals are accessible



54-xxxx et 108-xxxx

An indispensable complement to the Breakdown Box, the 54 or 108-track interfaces are suitable for all vehicle ECUs.

- Depending on the model, the wiring loom has 2, 3 or 4 round connectors for the rear of the Breakdown Box, male connectors for the ECU end and female connectors for the wiring loom end of your ECU circuit
- The inner and outer panels are supplied with the wiring loom (track numbering unique to each connector)



54-48GR-L



Summary of the list of interfaces for BAP54C or BAP108C :

- 54-32GR : 32-way connector - Grey
- 54-32NR : 32-way connector - Black
- 54-48GR : 48-way connector - Grey
- 54-48NR : 48-way connector - Black
- 54-48MR : 48-way connector - Brown
- 54-53MR : 53-way connector - Brown
- 54-53NR : 53-way connector - Black
- 108-64MR : 64-way connector - Brown (DCI Euro 6)
- 108-64NR : 64-way connector - Black (DCI Euro 6)
- 108-70NR : 70-way connector - Black (HDI Euro 6)
- 108-120NR : 120-way connector - Black (HDI Euro 6)
- 54-BSI-FULL-CAN-1 : 40 W Bleu & 10 W White
- 54-BSI-FULL-CAN-2 : 40 W Black & 10 W Black
- 108-BSI-2010 : 60 W Black & 35 W Black

Nearly 50 references are available, the full list can be found on:

WWW.EXXOTEST.COM

BAP-MINI-6

Small & lightweight, this mini 6-track Breakdown Box can be fitted, in series, to the **sensors and actuators** on PSA vehicles. It is easy to read and makes it possible to disconnect tracks (disconnecter switches).

- accelerator, motorised valve, temperature sensor, flow meter, etc.



BAP-MINI-6

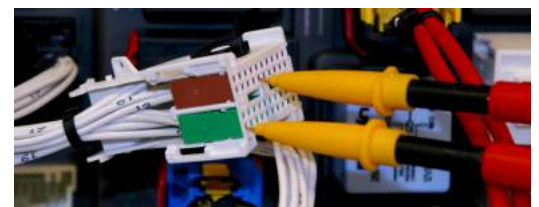


PT05/2

0.63 mm diameter retractable measuring probe for sensitive applications, designed for contact readings from fragile, thin contacts. Adaptable to standard 4 mm measuring probe.



PT05/2



BAP-PACK

EXXOTEST provides complete assemblies for the most **commonly used vehicles**.

These packs include Breakdown Boxes and their mobile stands, wiring looms and panel sets:

BAP-PACK-BSI-2004 : 2x BAP 108 & 2 mobile stands + 10 wiring looms for **BSI Full CAN PSA**

BAP-PACK-BSI-2010 : 2x BAP 108, 1x BAP 54 & 3 mobile stands + wiring loom with **BSI 2010 PSA connectors**

BAP-PACK-BSM-2004 : 1x BAP 108 & mobile stand + wiring looms for **BSM Full CAN PSA**

BAP-PACK-BSM-2010 : 1x BAP 108 & mobile stand + wiring looms for **BSM 2010 PSA**

BAP-PACK-ED : 1x BAP 108, 1x BAP 54 & 2 mobile stands + **48-way BN / 32-way BK / 32-way GR** (page 13)

BAP-PACK-EVIDTE3C : 1x BAP 108, 1x BAP 54 & 2 mobile stands + **53-way BN / 53-way BK / 32-way GR** (page 13)

BMxxx

The **measurement terminals** connect, in series, to the connector on the circuit undergoing **diagnostics**.

The measurement sockets are completely safe and are supplied with 'grip-fils' cable clips.

BM-PACK-

These **measurement terminal** packs are provided, for all terminals on a single system:

BM-PACK-DFAP : (motor page 13)
53-way BK / 53-way BN / 48-way GR

BM-PACK-ED : (motor page 13)
32-way BK / 32-way GR / 48-way BN

BM-PACK-EVIDTE3C : (motor page 13)
53-way BK / 53-way BN / 32-way GR

BM-PACK-LAD-C8 : (page 17)
For model MT-LAD-C8

BM-PACK-SE-C6 : (page 17)
For model MT-SE-C6

BM-PACK-VRC-C3 : (page 17)
For model MT-VRC-C3

BM-PACK-EG-C3 : (page 17)
For model MT-EG-C3

BAP-PACK-160V-DCI :

2 x Breakdown Boxes (108-way) with mobile stand 64-way Black, 64-way Grey & 32-way Black. *Example of use: Engine Management System R9M, Renault Mégane III 1,6 Energy dCi 130*



BAP-PACK-128-162 : 1x BAP 54, 1x BAP 108, 2 mobile stands, 48-way Black, 48-way Grey, 32-way Black, 48-way Brown, 32-way Grey. *Example of use: Engine Management System K9K Renault Mégane III 1,5 dCi 110 48BN/48GR/32BK. Second example: Engine Management System TU5JP4 Citroën C3 1,6 16V 120hp petrol engined 48BN/32GR/32BK*



BAP-PACK-DFAP :

1x BAP 54, 1x BAP 108, 2 mobile stand, 53-way Black, 53-way Brown, 48-way Grey *Example of use: Engine Management System DV6C Peugeot 308 1,6 HDI 115*



BM200

BM227



BM229

Summary of the list of available Measurement Terminal blocks (non-exhaustive) :

Engine Management:

- BM200 : 48-way connector Brown
- BM201 : 48-way connector Black
- BM202 : 32-way connector Black
- BM203 : 32-way connector Grey
- BM229 : 64-way connector Grey

Passenger compartment / Comfort :

- BM204 : 40-way Black + 10-way Black
- BM206 : 26-way Yellow + 6-way Black
- BM208 : EOBD II Socket 16-way
- BM210 : 48-way Green
- BM227 : 27-way Bleu + 27-way Black

Motocycle :

- BM300 : 34-way connector
- BM301 : 26-way connector
- BM302 : 18-way connector
- BM303 : 12-way connector

Nearly 40 references available.
For the complete list, see:

WWW.EXXOTEST.COM

ACQUISITION SOFTWARE

REFLET

The REFLET *signal acquisition software* provides detailed analysis of the signals from the models or vehicles being studied!

Two possible *acquisition methods*:

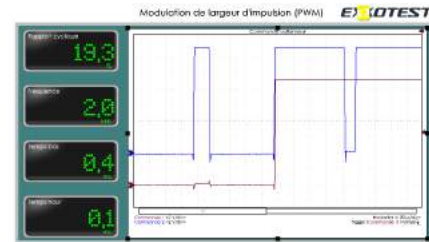
- ◆ Measurement via box
REFLESCOPE :

Connecting to a USB port on your PC, this acquisition unit is used to connect between 1 & 12 analog signals simultaneously, to which can be added the 4 oscilloscope tracks. The voltage readings from the vehicle or model can be displayed, interpreted (speeds, temperatures, time, percentage, etc.) and logged.

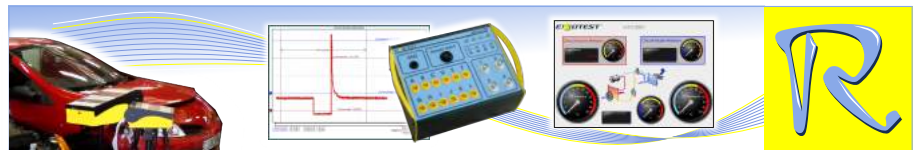
- ◆ **USB transfert** —  from compatible models :

in this mode the model is directly connected to the PC, the data are transferred to REFLET by USB.

All functions are available: logs, graphs, analyses, etc.



REFLESCOPE



REFLESCOPE in use, with a model, a training engine and a real vehicle

USB-MUX-4C4L

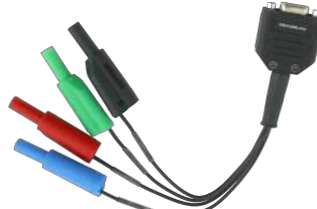
This USB unit connects your computer to the **vehicle / model communication network**, using real components.

Connections available :

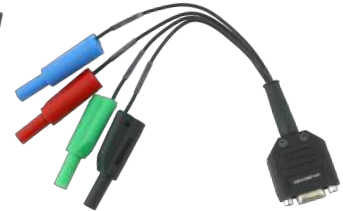
- 4 CAN connections High Speed or Low Speed (Std.: ISO 11898)
- 4 LIN connections (Std.: ISO 9141)
- Timer clocked at 500 ns for event stamping
- MUXTRACE Basic software supplied, with cables, as an option



USB-MUX-4C4L



AMUX-DB9-CAN



AMUX-DB9-LIN

USB-MUXDIAGII

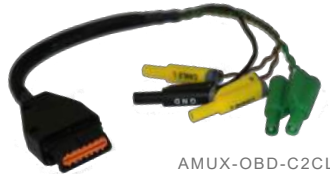
This USB/OBD interface unit connects your computer to the **vehicle / model communication network**, using real components.

Connections available :

- 2 CAN connections High Speed or Low Speed (Std.: ISO 11898)
- 2 LIN connections (Std.: ISO 9141)
- Timer clocked at 100 microseconds for event stamping
- MUXTRACE Basic software supplied, with cables, as an option



USB-MUXDIAGII

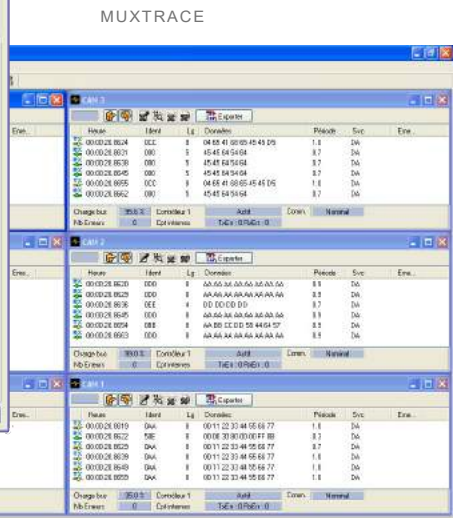
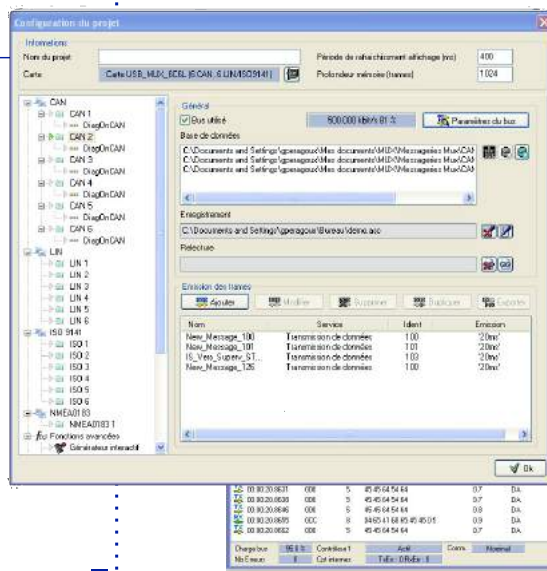


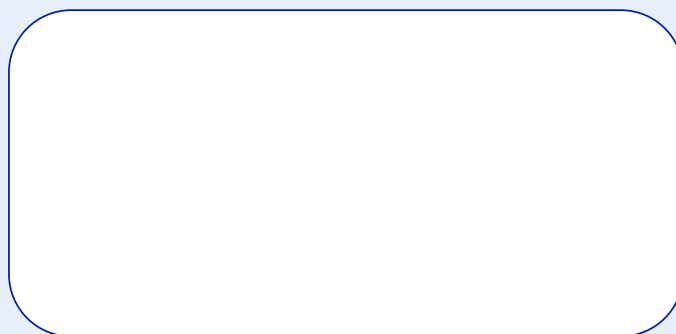
AMUX-OBDC2CL



MUXTRACE Basic

The MUXTRACE software is a **signal analysis and transmission** tool for **CAN High Speed, CAN Low Speed FT, VAN, LIN, ISO9141, NMEA0183 and J1708-J1587 communications networks**. The software can also handle CAN communication layers, as per ISO15765-2 (Diag on CAN) & ISO14229-1 (UDS).





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