

PicoScope Diagnostics

PC Oscilloscope Kit



Save time, Save money

To diagnose faults in the increasing number of sensors, actuators and electronics circuits in today's vehicles, you need more than just a fault code reader. The Pico Technology Automotive Diagnostics Kit, together with the PicoScope Automotive software, allows you to pinpoint faults without relying on fault codes. The kit turns any PC or laptop with a USB port into a powerful automotive diagnostics tool. The benefits don't stop when you buy the kit: you continue to receive free software upgrades and technical support for as long as you need them. There are no expensive add-ons or yearly maintenance fees: everything you need is included.

The kit can be used either in the workshop or on the road to test and measure virtually all of the electrical and electronic components and circuits found in the modern vehicle, including:

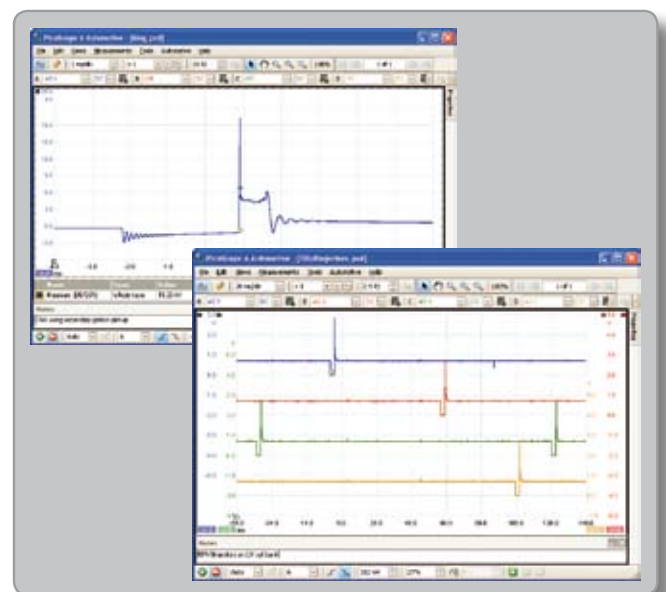
- Ignition (Primary and Secondary)
- Injectors and Fuel Pumps
- Battery, Starter and Charging Circuits
- ABS sensors, Crank and Cam Sensors
- Lambda, Airflow, Knock and MAP Sensors
- Glow Plugs and Timer Relays
- Relative Compression
- CANbus, LIN bus and FlexRay



Increase your repair rate and keep your customers happy

The kit is suitable for a range of users including OEMs, franchised and non-franchised garages, breakdown and roadside recovery organisations, and mobile diagnostic and repair services. This powerful and flexible automotive diagnostics tool has been designed for ease of use, so is equally suited to novice and expert users.

- Achieve more first-time fixes
- Don't just rely on the fault code or even on guesswork: confirm the fault for yourself before replacing a part
- Check that your repair was successful, so you can hand over the vehicle to the customer with confidence
- Improve your understanding of engines and other components



Kit Contents



PicoScope 4423 4-Channel Automotive Kit

Part No.	Price (ex. VAT)	
PP495	£1395	Kit
PP503	£799	Scope only

Finance available. Ask for details

PicoScope 4423 4-Channel Kit

- PicoScope 4423 automotive oscilloscope
- 60 A AC/DC current clamp
- 600 A AC/DC current clamp
- Two-pin break-out lead
- Acupuncture probe set
- Insulation-Piercing Probes
- 4 x 20:1 attenuators
- Dolphin clip (black)
- Dolphin clip (red)
- 4 x BNC to 4 mm test leads
- 4 x Secondary ignition pickup leads
- 2 x Small croc clips (red)
- 2 x Small croc clips (black)
- 2 x Multimeter probes (red)
- 2 x Multimeter probes (black)
- S-Hook
- Automotive software CD
- Vehicle Electronics Diagnostic Course CD
- USB cable
- Quick start guide
- Carry case

Technical Specifications

- Four channels
- High resolution
- Deep “always on” 32M sample memory
- ± 100 V max. input range
- 200 V input protection
- DC to 20 MHz frequency range
- 80 MS/s sampling rate
- Connected to and powered by USB 2.0
- Runs on Windows XP 32-bit, Windows Vista 32-bit & 64-bit



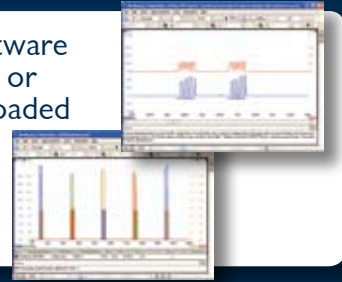
You can order each component in the kit separately, should you require any extra or replacement parts. Please visit our dedicated automotive website for more information:

www.picoauto.com

We have a network of distributors worldwide, details of which can be found at:

<http://www.picoauto.com/automotive-distributors.html>

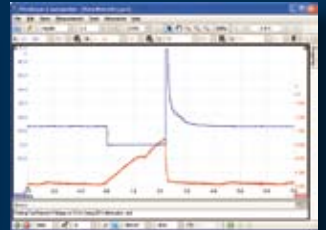
Supplied with all Pico Technology Diagnostics Kits, the PicoScope Automotive software is a powerful tool for capturing and viewing waveforms from almost any electrical or electronic system in today's motor vehicles. The software contains over 80 pre-loaded tests and reference waveforms under a simple "Automotive" menu. Each one launches a detailed help topic, and automatically sets up the oscilloscope and the software ready to acquire the waveform. You can easily save new waveforms to create your own reference library.



Example Waveforms and Tests

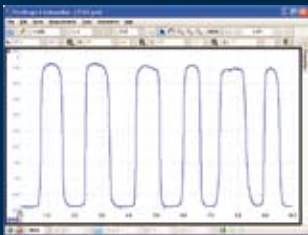
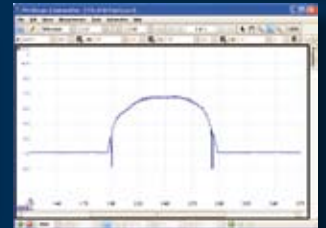
Injector Voltage and Current

The trace shows injector voltage (blue) and current (red). The dip in the current waveform occurs when the solenoid (pintle) opens and the fuel begins to flow. This test is ideal for identifying slow or sticking injectors without having to remove them from the engine.



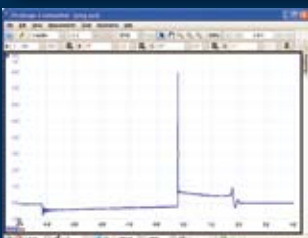
Air Flow Meter (air vane type)

This is a mechanical air flow meter in which a wiper moves across a carbon track. In this case the track has been worn away, leading to sudden drops in the waveform to zero volts. The fault will cause flat spots or hesitation during acceleration. The only solution is to replace the air flow meter.



Oxygen Sensor / Lambda Sensor

The waveform shows a titania-type sensor. When its output is high, indicating that the mixture is rich, the control unit adjusts the mixture until the sensor's output goes low, indicating that the mixture is lean. Oxygen sensors that are slow to respond require cleaning or replacement.

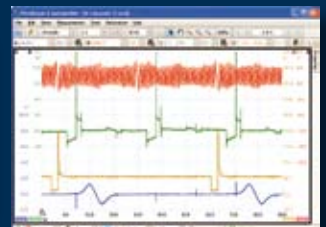


Secondary Ignition

The high resolution of the PicoScope Automotive Oscilloscope gives a detailed secondary ignition waveform. From this waveform you can measure the firing voltage, the burn time and the burn voltage. The coil oscillations are also clearly visible.

Cam, Crank, Secondary Voltage and Injector

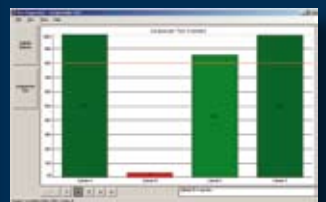
This trace shows four waveforms captured simultaneously: a camshaft sensor on channel A, a crankshaft sensor on channel B, a secondary ignition voltage on channel C and an injector voltage on channel D. These were captured from a 4-cylinder engine with a DIS wasted spark ignition system.



Relative Compression and Battery Test

The Pico Diagnostic software analyses relative compression automatically. There's no need to interpret complex waveforms: just run the program and read the report. You get a diagnostic chart that helps to explain your repair to the customer.

The same program also runs an automated battery test. You just start the engine and the program does the rest, giving you a detailed report on the state of the battery.



Free software upgrades are available to download from our website at:

www.picoauto.com

Automotive Support

Built-in Technical Library

Each Automotive Kit includes the full version of PicoScope Automotive with access to over 80 topics and waveforms.

Try before you buy: simply download a free copy of the software and let it run in demonstration mode.

Get it from

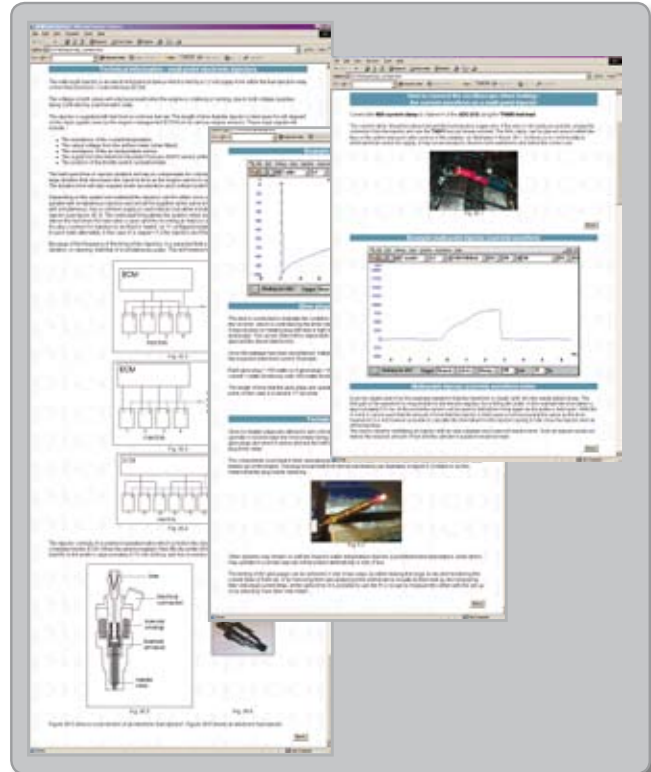
www.picoauto.com/software.html

Automotive Technical Experts

Our team of technical experts are on hand to assist you with your purchase and answer any technical queries you may have.

Online

The Pico Technology website features a support forum where members can post questions and share comments on Pico products. Our website also contains a series of Automotive tutorials and application notes, designed to expand your knowledge of automotive diagnostics.



Automotive Training Courses

Pico Technology run a number of diagnostic training courses. Focusing on engine management diagnostics, the courses will show you how to get the best from the PicoScope software and Diagnostics Kit.

Vehicle Manufacturers / OEMs

For vehicle manufacturers, we can customise the PicoScope Automotive software to provide waveforms and data specific to particular makes and models of vehicles.

For further information please call us on the telephone number below.

Other Vehicle and Engine Applications

We have a variety of oscilloscope diagnostic kits for bikes, vans, trucks and other vehicles.

For example, our Commercial Vehicle Kit is used by a number of leading vehicle manufacturers.

For further details visit www.picoauto.com or contact us at the address below.



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