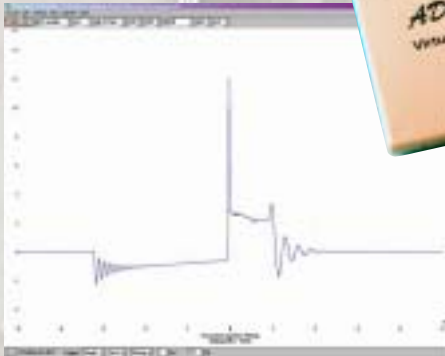


Automotive Diagnostic Kit

DIAGNOSTIC KIT



The Diagnostic Kit is based around the successful ADC-212/3 PC based oscilloscope, and includes PicoScope, a powerful software and information package. The kit turns your laptop or desktop PC into a powerful automotive diagnostic tool for fault finding.

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

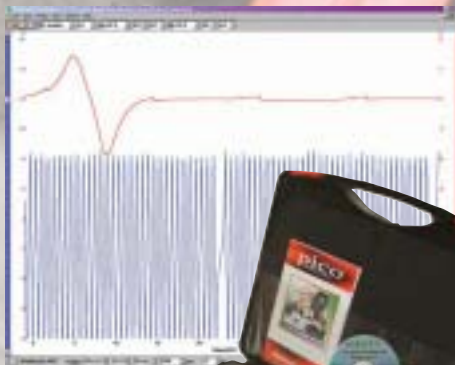
- Ignition (primary & secondary)
- Injectors & fuel pumps
- Starter & charging currents
- ABS sensors, crank & cam sensors
- Lambda, airflow, knock & MAP sensors
- Glow plugs/timer relays
- Relative compression tests



There are two options available for the Automotive kit, the Basic Kit and the Advanced Kit.

The Basic Automotive Kit contains the following products:

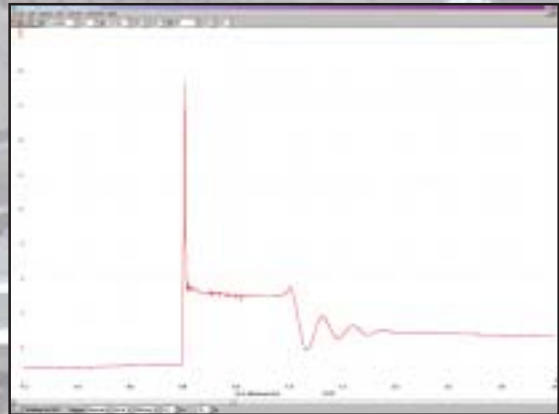
- ADC-212/3 oscilloscope
- 600A AC/DC current clamp
- 20:1 attenuator
- 2 x multimeter probes
- 2 x small croc clips
- 2 x dolphin clips
- Insulation piercing probes
- 2 x TA000 test lead
- Secondary ignition pickup
- 2-pin break out lead
- Automotive software CD
- Quick start guide
- Sturdy carry case



The Advanced Automotive Kit contains all the products found in the Basic Kit, but also includes the following:

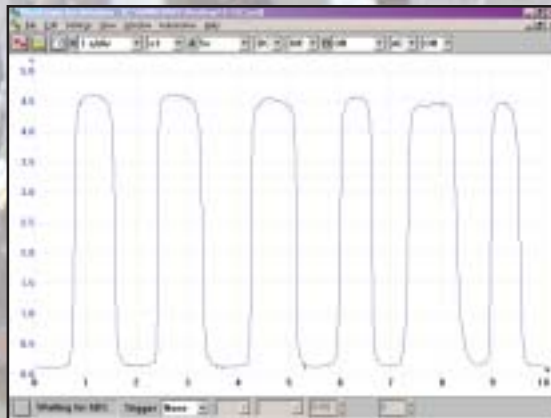
- 60A DC current clamp
- Acupuncture probe set
- Additional secondary ignition pickup
- Cigar lighter power lead

Secondary Ignition



The high resolution of the ADC-212 gives a superbly detailed secondary ignition waveform. From this waveform we can measure the firing voltage (plug kV - approx 23kV), the burn time (approx 1 millisecond) and the burn voltage (approx 4kV). The coil oscillations are clearly visible.

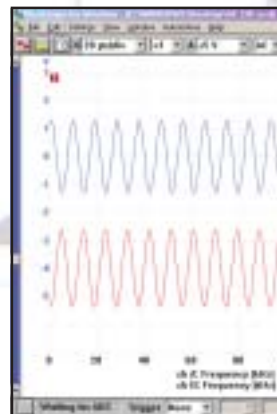
Oxygen Sensor/Lambda Sensor



The waveform shows a titania type sensor. When the output is high, the mixture is too rich and is adjusted until the sensor detects that the mixture is too lean (by dropping the output low). This is referred to as a closed loop system. Lambda sensors that are slow to respond require cleaning or replacement.

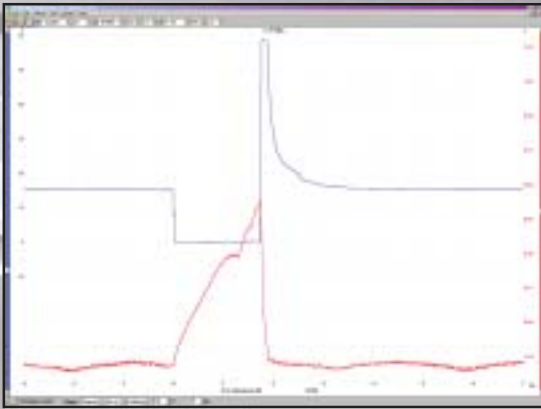


Camshaft Sens



waveforms

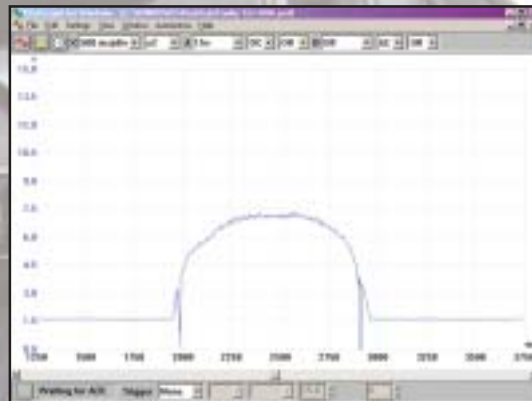
Injector (voltage and current)



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

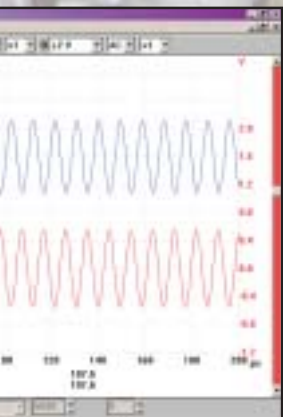


Air Flow Meter (faulty air vane)



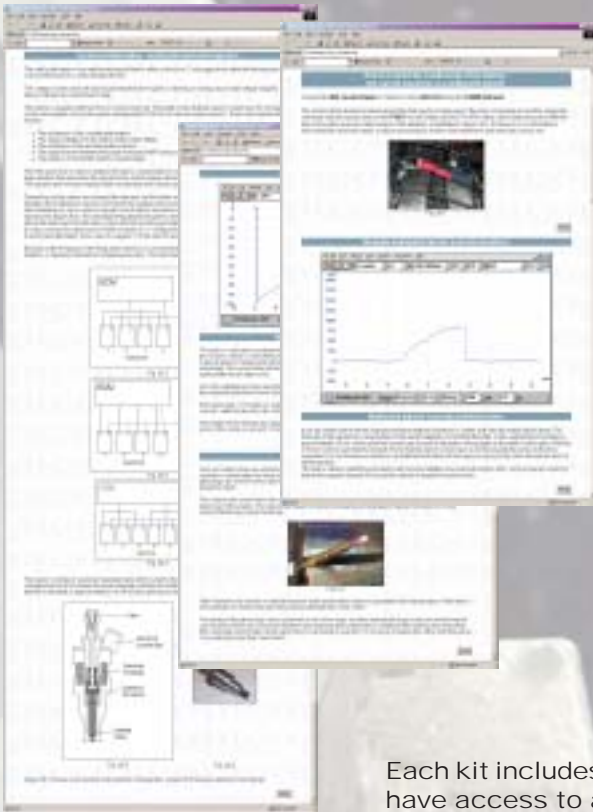
This is a mechanical air flow meter where a wiper moves across a carbon track. In this case the track has been worn away: this leads to the sudden drops in the trace to zero volts. This fault will cause flat spots or hesitation when driven. The only solution is to change the air flow meter for a new one.

Injector - AC Excited



This sensor is used on some ECO TEC engines. A fast signal (approx 100kHz) is sent to an exciter coil in close proximity to a disk attached to the camshaft. A gap in the disk is used to signal the position of number one cylinder. Due to the high speed and long duration, not all automotive oscilloscopes can capture this signal.

Built in Technical Library



In PicoScope, the Automotive menu contains a list of the different sensors and circuits that can be tested with the Diagnostic Kit. When the subject of interest has been selected, the software will automatically do a number of things:

- Load a reference waveform into PicoScope
- Load a web page. This shows how to connect the scope, gives advice on what the waveform should look like and gives general technical information
- Load the required settings, removing the need to spend time on setting PicoScope up

Each kit includes the full version of PicoScope, and you'll have access to all 50 topics and waveforms.

If you would like to try before you buy, download the demo version of the software. This includes four of the main topics, requires no Pico hardware to work, and is FREE of charge.

To download the demo version of the software, please visit:

www.picotech.com/auto/automotive_kit.html

Pricing & Ordering

www.picotech.com/auto

All of our products can be ordered online through our e-commerce service. Payment is accepted by credit / debit card over the web. Alternatively, you can place an order by phone, fax or post.

Unless otherwise agreed, all orders will be despatched by courier, and carriage will be charged at:

- £10 for UK
- £20 for EU/US
- £30 for ROW

Description	Price	Order No./Power Supply		
		UK (230V)	EU (230V)	US (110V)
Basic Automotive Kit	£599	PP201	PP203	PP205
Advanced Automotive Kit	£749	PP202	PP204	PP206

Pico Technology Ltd, The Mill House, Cambridge Street, St Neots. PE19 1QB. UK

Tel: 01480 396395 Fax: 01480 396296 E-mail: sales@picotech.com Web: www.picotech.com