

Vehicle Diagnostic Oscilloscopes

The fast and easy way to diagnose faults

INCREASE SALES AND PROFITS WITH PICOSCOPE

More than 20 of the world's leading vehicle manufacturers use PicoScope to quickly diagnose problems and fix them right first time. They use PicoScope to reduce parts swapping and increase customer retention. Your workshop can use PicoScope to grow business and increase profits today!

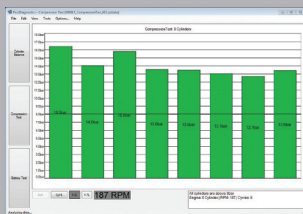


IDEAL FOR INTERMITTENT AND PERFORMANCE ISSUES

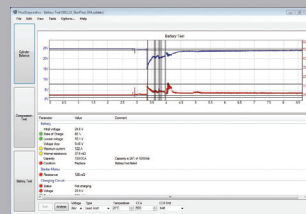
Using PicoScope Automotive is fast and easy. Simply select the component or circuit to be tested and the software will automatically load the required settings and give you details of how to connect the scope. It also displays advice on what the waveform should look like and general technical information on the component being tested.

Once you have a PicoScope Automotive scope you can also make use of PicoDiagnostics™. PicoDiagnostics is a complete engine health check. With just a simple connection to the battery you can perform a cylinder balance test, detect misfires and carry out a compression test. Also included in our PicoDiagnostics software is a fully featured electrical system test to check the battery, starter motor and alternator. The results are displayed in a bar graph that can easily be understood by you (and your customer!). All Pico Automotive software is free to download, and update, with no annual subscriptions.

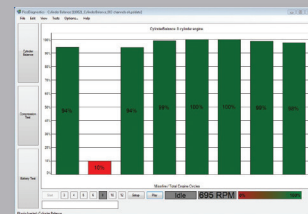
Charging and Starting	Sensors	Actuators	Ignition
Alternator	ABS	Fuel Pump	Primary
Battery Discharge	Air Flow Meter	Glow Plugs	Secondary
Cranking	Knock Sensor	Idle Speed Control	Coil On Plug
Starter Current	Crankshaft	Injectors	Misfire
Relative Compression	Fuel Pressure	Stepper Motor	Dwell and Burn Times



Compression test



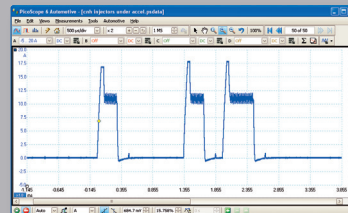
Battery test



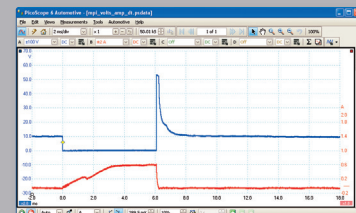
Cylinder balance



ABS

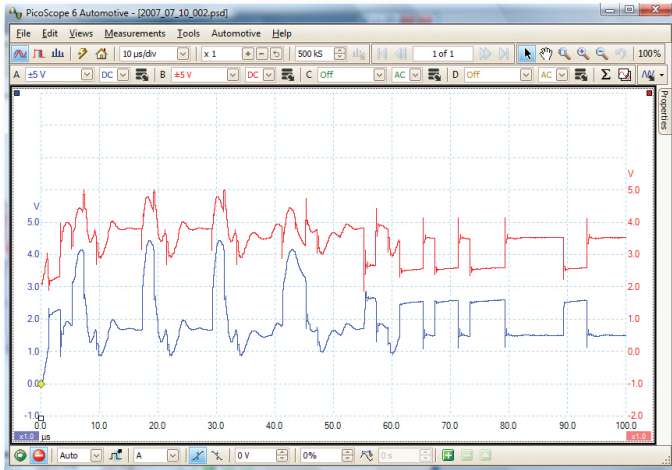


Diesel injectors



Petrol injectors

CAN BUS - Intermittent ESP light



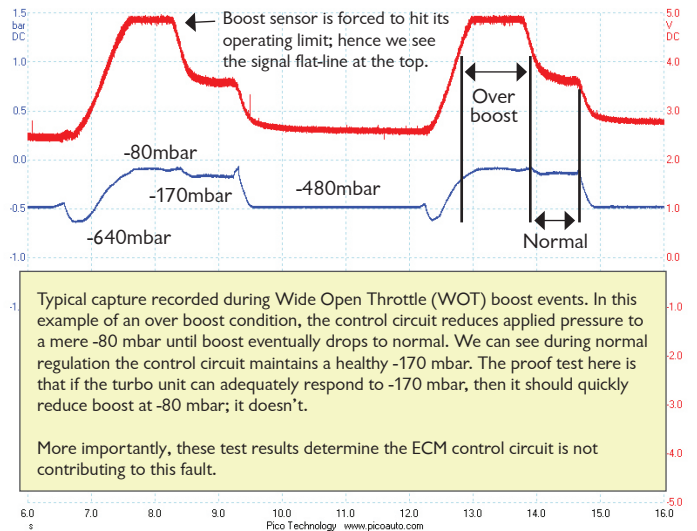
Scanning fault codes on a Audi TT Quattro revealed intermittent CAN Bus errors. When the fault was present, the ESP light would go out on start-up but then illuminate as the car was driven. The CAN network was inspected using PicoScope whilst the vehicle was driven, and the captured data reviewed when the ESP warning light illuminated, showing that the CAN bus signals were incorrect. After a visual inspection of the wiring, we scoped the bus lines with the ABS ECU disconnected. As the scrambled signal was still present, we reconnected the ABS and disconnected the Haldex module on the rear diff; PicoScope displayed a good set of bus signals. As the supply and earth were confirmed as OK, the Haldex unit was replaced, and the CAN bus signals returned to normal.

www.picoauto.com/tutorials/audi-can-bus.html

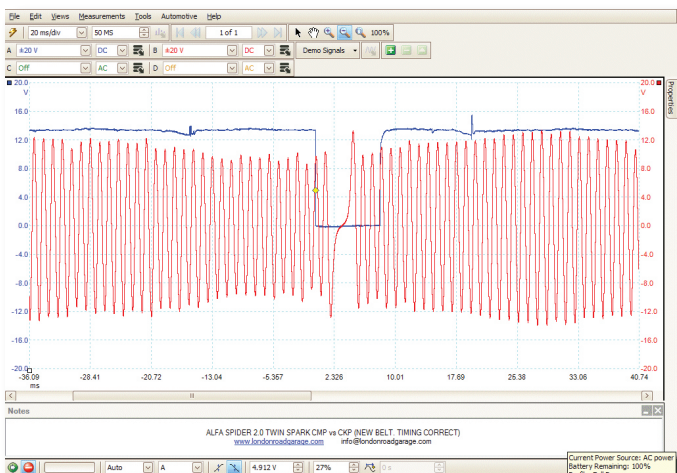
Diesel Variable Nozzle Turbocharger

After a few years of steady use of a Variable Nozzle Turbine (VNT), carbon deposits build up around the vane mechanism causing it to seize, therefore allowing boost to deviate from normal. A WPS500X was connected on the solenoid output line to measure the negative pressure applied to the turbo actuator. When the required boost level is reached, we expect the ECM to release and regulate pressure applied to the actuator whilst maintaining a suitable boost level. If however the vacuum level correctly falls yet the boost level continues to rise, then we have a problem. This test allows us to see what is happening at the end of the control circuit, and can reveal leaking solenoid valves, and blocked solenoid waste outlet.

www.picoauto.com/tutorials/vnt-pressure-control.html



Valve Timing Errors – Misleading MIL



An Alfa Romeo Spider 2.0L Twin Spark with MIL lamp illuminated, but no drivability issues. Reading DTCs indicated “CODE 8 PHASE SENSOR CIRCUIT” which cleared at KOEO, but returned when the car was started. As the auxiliary drive belt had recently been shredded, we decided to check the valve timing. This test only takes a few minutes and, with a known good capture as reference, is as effective as stripping the timing covers and visually confirming timing mark alignment. With cam and crank reference marks, PicoScope can be used on a running engine where any excessive slack can be seen as ‘wandering’.

www.picoauto.com/tutorials/timing-issues.html