

Tuning and diagnostics

Tools & Equipment

These vary from LED based testers which are used for reading Flash Codes, to software based scan tools which are compatible with EOBD connectors, and many contain additional features, including software which can be used to connect scan tools to a PC and Printer.

The method of fault code reading varies from manufacturer to manufacturer the easiest way to access fault codes is by using flash codes displayed on the MIP (Malfunction Indicator Lamp). Most flash codes are very confusing with up to 10 flashes per group and 5 groups of digits, so reading them accurately is quite difficult, the possibility of miscounting is very likely.

Most of the scanner tools made now will enable fault codes to be removed, without disconnecting the battery, which will avoid the loss of the Control module valves and radio codes. All Software based equipment will need to be updated regularly by replacing "pods" or "CD's" provided by the equipment suppliers.

Multi-Meters

Most electrical faults can be successfully diagnosed using an Ohmmeter or a Voltmeter. Normally these two functions are combined into a multi-meter. A Multi-meter that includes a 0-20 voltage scale and a high and low range ohm scale, it is recommended for measuring the resistance and the voltage of system components. Analogue meters are useful for counting needle deflections to find fault codes on certain makes and models, but digital meters are better for workshop use because they are more resistant to rough handling, and are less likely to break in the workshop environment.

Oscilloscopes

Oscilloscopes

designed for automotive use can be hand-held and are brilliant for workshop use, the oscilloscope is a powerful workshop tool.

Usually

it's possible to save wave forms and other data in an internal memory bank and then you can print it out enabling the scope patterns to be studied in much more detail. The Oscilloscope can also be used to check the overall condition of your vehicles Engine Management system by monitoring the oxygen sensor.