



Scantools & Replacement Parts

“The Days Of Guessing Are Over”



Matt Hardy

Recently a reader told us that a vehicle had just arrived at his workshop after another repairer had “had a go” and thrown parts at the vehicle in an effort to cure a fault – all this at the owner’s expense.

Simply connecting a scantool to a system is not enough – understanding how it works and knowing what the tool is telling you saves you and the customer money and time. In this issue we ask Brisbane-based technician and technical trainer Matt Hardy to start with the basics of what the average workshop technician requires. Matt continues...

repair a vehicle can be dramatically different from what you have come to know. In this article we’ll talk about the various aspects of scantools and what may be important to you.

Why invest thousands of dollars on a scan tool? Depending on your business type you may not need to spend thousands. Entry level scantools able to retrieve and clear codes from a very large range of vehicles can be purchased from as low as a couple hundred dollars. If you perform mechanical services primarily, a basic scantool will allow you to clear codes which are often accidentally logged during service tasks.

The next step is to look at a scantool that allows for data analysis and function tests. For a technician that has fundamental electronic and automotive knowledge using data to diagnose faults is much easier than old school pin testing. You can analyse hundreds of lines of data in a few minutes in multiple areas of the vehicle. Although you have access



(pics used for representation purposes only)



Automotive Technicians are faced with new technology in vehicles every time a new model is released. So within 5 to 10 years the knowledge, hardware and software you may need to service and

COMPLETE IGNITION SOLUTIONS



While NGK have built their reputation in Australia over the last 35 years supplying the largest range of top quality spark plugs, following the recent release of their ignition coil range, NGK now provides the complete ignition solution.

“Automotive mechanics, workshop managers and technicians already know that our range of spark plugs are specifically designed for the individual requirements of each engine, but when you combine that with our extensive catalogue of ignition leads and our newly released ignition coil range, we can now truly say we offer a complete ignition solution,” said

James Filshie, Senior Product Manager at NGK Spark Plug Australia.

There is no doubt that with the launch of their ignition coil range, NGK are continuing to deliver on their promise of providing exceptional value by exceeding customer needs through outstanding product quality, extensive range and superior customer service.

“To ensure we deliver on this promise, we have implemented a series of technical and customer service benchmarks that apply across our three product groups, spark plugs, ignition leads and ignition coils,” James explained. “As a result we have developed loyal and valued relationships with trade workshops and mechanics all around Australia.”

“This is primarily due to the fact that we develop products for each individual vehicle application. This ensures all of our ignition components work together to deliver complete ignitability, maximum engine power and optimum fuel economy, while at the same time minimising emissions,” he added.

NGK have been synonymous with ignition systems for over 80 years, this is in no small part due to their heavy investment in research and development.

“We are driven by continuous product improvement, range expansion and innovation,” said James. “Whether it’s in the lab or on the race track, you’ll find NGK technicians continually pushing the limits of endurance and performance.”

In addition to their commitment to research and development, NGK also pride themselves on their superior manufacturing processes.

“When you choose NGK you are buying peace of mind as all products manufactured by NGK adhere to the well-known high quality standards of NGK Japan,” added James.

To find out more about NGK’s complete range of ignition solutions visit ngk.com.au or call one of their highly trained customer service representatives on 1300 55 40 59.



to lots of data from the vehicle, you will also require a great deal of information and/or experience to diagnose faults or perform advanced tasks.

I often get asked, "Do you have Tech Tools that can diagnose the fault in my car"? To which I answer, "Yes, but it's really me pressing the buttons that does the diagnosing, not the tool."

Once the task of communicating to a vehicle, accessing codes and viewing data have become tasks performed with confidence, the next is function tests and adaptations. Manufacturers all like to have their own terminology. Where Volkswagen may use the term adaptation or basic setting to learn a new sensor in an engine management system, Holden may use terms like coding or programming. For this reason once we start coding, programming or adapting, you will need some vehicle specific knowledge. Some of these procedures performed when not necessary can cause issues such as clearing keys from memory, clearing automatic gearbox values etc. Make sure you know what the function is going to do before you get halfway through!

The above tasks are what are expected of a modern workshop. These tasks get you out of trouble if you've logged a code or left something unplugged, you can also learn in new parts that you have fitted. The next functions like programming are rarely required in a service situation. Maintenance of vehicles is generally the focus of workshops, so investing in equipment that can do further functions will not give you a great return for your dollar spent.



Once you get to the stage of replacing control modules you will need to be able to "program" the module to the vehicle. This function is generally performed by Dealer due to the amount of effort they put in to withhold the hardware and software required to perform the tasks. Programming will require a genuine level scantool with access to the software to load into the new module.

When engine control modules are programmed you are loading information such as the VIN, immobiliser data, engine type, gearbox type, optional modules, and configurations relating to the vehicle. Without this information the module is useless, so make sure you can finish the job before you order that new module.

Programming is risky!

During the process of uploading data to a module if there are any interruptions to the process, the ECU will often be non usable from that point on. It doesn't happen very often but it does happen from time to time, usually caused by low battery voltage or a disturbance of the connectors. With our current

level of technology in vehicles programming is still best left for those performing these tasks regularly. It can be quite expensive "practicing" to program.



As the amount of software in our vehicles increases, so does the number of possible issues. Fault codes being logged unnecessarily is the most common issue, but there are many other updates to rectify all sorts of issues from battery drain to immobiliser failures.

These updates are generally only performed by dealer if symptoms are present, they don't update every vehicle that comes in so don't feel bad if you don't tick that box in the service book.

You'll find out about useful updates from your local programmer or dealer subscriptions.

Oscilloscope integrated scantools are a great idea, though will increase the price and size of your scantool. Once efficient with codes and data, being able to check the quality of a signal using the oscilloscope is very valuable. The ease of having both scantool and scope in the one tool dramatically reduces the amount of time and equipment needed to diagnoses a circuit. The oscilloscope is a fairly foreign device for most automotive technicians and requires fundamental electrical and electronic knowledge to diagnose a fault accurately.

With Globalisation comes the counterfeit products from China. These tools can look exactly the same as genuine equipment though internally are limited by the difference in inferior hardware.

I've seen a range of products that do either nothing or will perform a small percentage of the genuine version. If you are an enthusiast not a professional these tools may be of some use, but when in a profession you need to be sure that you're equipment can actually do what it says it does.

Although Genuine scantools are expensive and often need a software subscription, they do what they say they will do.

In conclusion, there are many different scantools available, I have over 15 different versions at present, most PC based and require a good dose of PC knowledge to setup and use. By analysing your business you can decide what scantool may be right for you. One thing to remember is that with software comes errors, genuine tools have errors as do aftermarket ones. The trick is to know your scantool well enough to know what does and doesn't work.

I've trained hundreds of technicians and everyone gets excited about learning about new scantools but it's easy to get dragged in by your curiosity well past the efficiency of your business. Focus on what makes you money. Get very good at the basics and learn about the vehicle using genuine information and you will then know how to use the appropriate scantool.

Matt Hardy owns Mastertech Automotive Diagnostics which services the Brisbane area. He has 15 years experience in electronic control systems in training, sales and hands on diagnostics. Mastertech offers a service to fill in the gaps that the trade has in this electronic field. Due to the equipment and research Matt has done he can often diagnose, code or program the jobs that your scantool and staff cant do. Matt can be contacted on 0428 747 618 or email mhardy130@gmail.com