

## Scan Tool and Services Overview

**Overview:** Pre-and Post-scanning solutions available today for collision diagnostics vary widely for applications and capabilities. Some tools or services are applicable for a “Triage” function before repairs or code clearing at the end of repairs and more depending on how far you want to go. Shop owners, managers, technicians, estimators etc. must understand the capabilities of each option and/or the capabilities of tool or service selections they make. Basic code readers and tools described as OBD2 “AKA Generic” will not be effective for functions beyond powertrain emission based functionality. Tools must have “enhanced” functionality for all electronically controlled systems including, braking, lighting, park assist, airbag, stability control and more. Scan tools also vary by other types, such as hand held, PC based software with vehicle interfaces, (The DLC cable connection to the vehicle). OEM scan tools, Aftermarket multiline scan tools, specialty scan tools, and remote scan tools or services all vary by these types.

Keep in mind what a scan tool does and doesn’t do, and their levels of functionality. Scan-tools do not technically fix or directly diagnose anything. However, without functions being available from high level scan tools, diagnostics, calibrations, programming and re-learn function are mostly impossible. ***A qualified technician who is proficient with diagnostic process and software management with access to service information is required to perform operations beyond basic code retrieval and clearing.***

### Additional basic support equipment needed to be effective.

- Service Information
- Battery support
- Battery tester
- TPMS tool
- Seat Weights
- Object detection targets
- Test lamps
- Multi-Meter
- Wire slicing tools

There is more detail in **Support Equipment for Diagnostic Scanning and Calibration document.**

### Special security functions (OEM anti-theft devices)

- *Security functions may be needed for powertrain control module replacement, Key cylinders or keys, immobilizers and some instrument clusters*
- *Licensed Security Identification Number (LSID) registration with the Secure Data Release Model (SDRM) is required for whatever method you use.*
- *See [www.NASTF.org](http://www.NASTF.org) for more information on obtaining LSID*

## ***Options for collision shops to perform scan services independently***

**OEM Scan Tools;** These tools use their manufacturer proprietary diagnostic protocols and are designed and supported for use in the specified OEM line of vehicles. Some of these tools can be very expensive to acquire and maintain. They are designed to be directly connected to a vehicle for **ALL** the functions required for a manufacture’s capabilities in all areas of the vehicle. In the last few years OEM scan-tool software access has become more accessible and is available for many manufacturers on short term subscriptions as needed. These software packages are PC based programs and use OEM validated J2534 interfaces that are compatible with the vehicles and software packages.

### ***Strengths:***

- OEM scan tool updates are normally released shortly after or at the time new vehicle platforms or new model year is made available for sale or when updated programs to improve existing functions are released. This increases the likely hood of coverage and capabilities.
- Full coverage and functions available from OEM

- For a shop that specializes in 1 or 2 OEM manufacturers and employs a diagnostic specialist, an OEM scan tool approach may be the best solution.
- Includes module programming and set up capabilities (additional subscriptions required)

**Weaknesses:**

- These tools are limited to coverage of their respective OEM.
- Separate scan tools and subscriptions are needed for each manufacture and/or year range of vehicles serviced
- Requires maintaining the software updates for tool and OEM subscriptions to obtain programming file downloads and service information needed to apply the functionality
- Some manufacturers have multiple versions of their OEM scan tools that cover certain model years and may be available in either the original handheld design or as a PC application.
- Some original version OEM tools have been discontinued and replaced with emulated software programs.
- For some OEMs, the user must have multiple diagnostic platforms or scan tools for different models of vehicles as the newer platforms are not reverse compatible with older MY vehicles.
- Shop must employ and train diagnostic specialists proficient in diagnostics and scan tool use/maintenance
- Some procedures may require additional on car testing a shop is not equipped for
- Shop must document and bill procedures appropriately from each different tool
- Security function require shop to obtain an LSID or sublet.

**Aftermarket scan tools:** A scan tool’s ability to retrieve and clear trouble codes, acquire lines of data for multiple manufacturers, (read sensor output and observe data or activate actuators like idle air control, body functions, transmission controls etc.) or perform special re-learn or calibration functions depends on the tool. Some capabilities are common to almost all scan tools beyond OBD-II generic scanners to varying degrees. Higher-level, enhanced scan tools provide a decent number of lines of information and do a good job of giving information on numerous applications. The highest-level aftermarket scan-tools contain most or all “re-learn” and calibration procedures. This will also vary by vehicle and the level of software in the tool. Today’s aftermarket scan tools can be 6 months to 2 years behind for full procedures for the current model year release. This depends on the tool makers’ ability to acquire and develop software. Some aftermarket tools have specialized coverages for “Asian” “Domestic” or “European” applications, depending on the tool and tool manufacturer.

Specific aftermarket scan tool descriptions and definitions are available in separate document titled; “Scan-Tool definitions and descriptions”

**Strengths:**

- Covers multiple manufacturers and functions across a wide range of model years
- Common user interface platform across multiple manufactures
- Highest level of enhanced tools contain OEM level functions and capabilities
- Fewer tools and subscriptions to maintain

**Weaknesses:**

- May not have functions or coverage needed for latest release vehicles (newer than 6 months or 2 years depending on tool provider)
- Capabilities of each aftermarket tool option must be researched to insure expected performance for applications
- Requires software subscriptions for updates and coverage levels
- Requires additional equipment and/or OEM sourced subscriptions for programming of replacement modules or sublet of these functions, Security function require shop to obtain an LSID or sublet.

- Some procedures may require additional on car testing a shop is not equipped for
- Shop must employ and train diagnostic specialists proficient in diagnostics and scan tool use/maintenance
- Shop must document and bill procedures appropriately

## ***Options for shops to sublet scan services.***

### **Mobile Service Providers:**

Mobile service providers can take the pressure off a shop to acquire and maintain scan tools as well as performing hands on procedures beyond what a scan tool is capable of by itself. Mobile service providers usually have an assortment of aftermarket and OEM tool sources on hand appropriate for the procedures needed. Mobile technicians should have the equipment and ability to perform replacement module programming

### **Strengths:**

- Eliminates shops need to employ and train diagnostic specialists
- Eliminates shops need to purchase and maintain equipment
- Mobile service provider provides scan tools and equipment appropriate for services needed
- Module programming is available (depending on providers equipment and subscriptions)
- Security functions possible if mobile service provider has LSID registration
- Mobile service provider can perform hands on functions independently without shop personnel involvement
- Sublet invoice is provided

### **Weaknesses:**

- Some markets may not have available service providers
- Scheduling and availability of mobile services can delay work flow
- Work needed can be limited to a mobile tech's equipment and skill area (some mobile tech services are specialized)
- Scheduling conflicts can prohibit scanning or calibration functions resulting in shops going forward with repairs or delivery without a full assessment of a vehicle.

### **Sublet programming, calibrations, and advanced diagnostic functions to a dealer or diagnostic specialty shop**

This is a time-consuming process and is usually done after repairs have started and additional problems are present. Increases cost due to towing and rental expense. It is not feasible for a pre-repair or estimate process during blueprinting stage of repair estimate.

### **Strengths:**

- Module Programming is available
- Dealers can obtain security ID to perform security related component initializations
- Same as mobile service provider

### **Weaknesses:**

- Increased cost transporting vehicle
- Increased cost per service
- Scheduling and wait time for diagnostic procedures

- Dealer services are limited to their OEM franchise
- Increases cycle time and rental expenses
- Non-dealer sources may be limited in capability

### **Remote Service Providers:**

Currently there are 2 different approaches to providing remote services for applying pre-and post-scanning with calibration and programming capabilities. These methods offer on-demand services that reduce or eliminate the need to transport vehicles. Both methods use aftermarket and OEM scan-tool sources and employ diagnostic specialists to operate the scan tool. There are distinct differences with each approach.

### **Remote connected scan tool via aftermarket IP connected interfaces:**

This method is a patented process exclusive to the specific service provider and aftermarket hardware supplier. The hardware is an aftermarket communication interface that connects a vehicle's DLC port for conversion to TCIP (internet language) to be transmitted to another aftermarket interface for conversion and connected to a scan-tool in a location other than the vehicle. OEM and aftermarket scan-tools are operated by diagnostic specialists who interpret vehicle data and codes with recommendations. The remote diagnostic technician performs the procedures needed for pre-or post-repair scan analysis, diagnostic functions, system calibrations or module programming in conjunction with available OEM and aftermarket service information sources. Scan-tool commands or procedures are then transmitted from the remote location back to the vehicle.

### **Strengths:**

- ASE Certified Diagnostic specialists perform functions and interpret results
- Diagnostic specialists provide guided fault finding to a shop as needed
- Module programming is available
- Full documentation and service information recommendations with scan tool results
- No waiting for transport to dealer/equipped shop or scheduling of a mobile tech availability
- No scan tools for shop to purchase or maintain
- No need to recruit hire and train diagnostic specialist to perform services independently
- Sublet invoice is provided

### **Weaknesses:**

- A Scan tool's connectivity to vehicle is dependent on internet conditions and the aftermarket interfaces' functionality
- In rare circumstances, the device may not return the same information that would result from a scan performed with an OE scan tool proximate to the vehicle
- Variations between cars according to the make, model and trim level, may limit the information provided by the aftermarket communication interface device.
- Module programming can fail due to internet connectivity interruptions.
- Shop will need additional support equipment (such as targets) for some calibrations
- Some issues can be missed if shop personnel do not inform remote diagnostic technicians of vehicle conditions or symptoms
- Security function requirements cannot be applied (subject to change)

### **Direct connected scan tool with remote access:**

This patent pending method involves placing a scan tool system with both OEM J-2534 and OEM compatible 3<sup>rd</sup> party software directly connected to a vehicle. This scan-tool system is remotely accessed by WI-FI, cabled, or cellular internet access. This method allows a diagnostic specialist to remotely log into the tool and take control to select the appropriate software and functionality needed for the vehicle connected. The remote diagnostic technician performs the procedures needed for pre-or post-repair scan analysis, diagnostic functions, system calibrations or module programming in conjunction with available OEM and aftermarket service information sources. Vehicle communications stay resident at the vehicle the way scan tools are designed and intended to be used by the scan tool manufacturers.

### **Strengths:**

- Both OEM and aftermarket scan-tools are connected directly to a vehicle via OEM validated interfaces as designed by manufacturers
- Diagnostic specialists perform functions and interpret results
- ASE Certified Diagnostic specialists provide guided fault finding to a shop as needed
- Full documentation and service information recommendations with scan tool results are provided
- Module Programming is available
- No waiting for transport to dealer/equipped shop or scheduling of a mobile tech's availability
- No scan tools for shop to purchase or maintain
- Sublet invoice is provided
- No need to recruit hire and train diagnostic specialist to perform services independently
- Scan tool continues to operate as designed if internet signal temporarily lost

### **Weaknesses:**

- Requires shop personnel participation
- Requires Solid Wi-Fi Internet signal for operation
- Some procedures may require additional on car testing shop may not equipped for
- Shop will need additional support equipment (such as targets) for some calibrations
- Security function requirements cannot be applied (subject to change)
- Some issues can be missed if shop personnel do not inform remote diagnostic specialists of vehicle conditions or symptoms