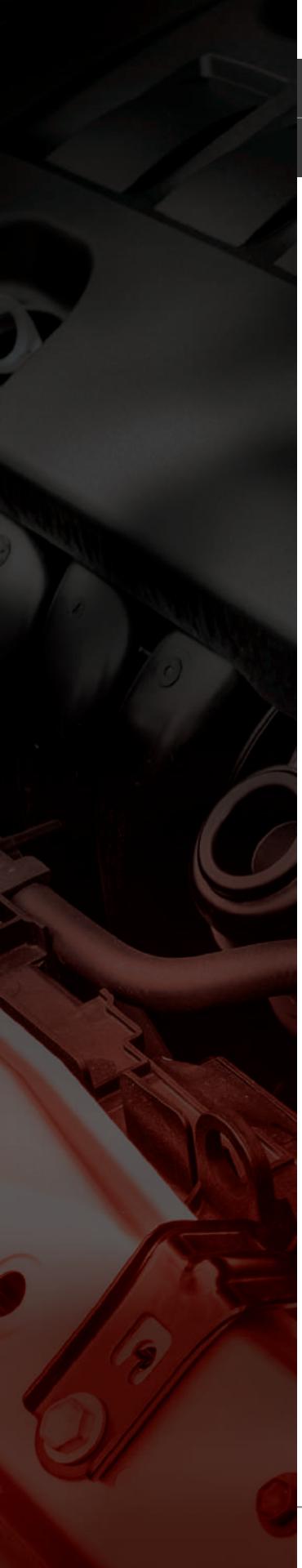
5610

INNOVA®

CarScan® PRO + REPAIR SOLUTIONS 2

USER'S MANUAL



HELLO...

On behalf of everyone at INNOVA, we want to welcome and thank you for purchasing the **INNOVA® 5610 CarScan® Pro**! Every automotive diagnostic Scan Tool we make includes tons of pro-level features designed to help maximize, and simplify, your OBD2 diagnostic routine. In this manual, we will guide you on how to access your tool's intuitive functions including:

- ☑ *Check Engine Light Diagnostics*
- ☑ *Smog Check/Emissions Readiness*
- ☑ *Full 10 modes of OBD2*
- ☑ *OEM Network Scans*
- ☑ *BMS/Battery Reset & Initialization*
- ☑ *Oil Maintenance Reset*
- ☑ *ABS Bleeding*
- ☑ *Electronic Parking Brake Reset*
- ☑ *Steering Angle Sensor Calibration*
- ☑ *33+ Services Reset*
- ☑ *Service Check: Oil Level, Oil Life, Brake Pad Life, Transmission Fluid Temperature*
- ☑ *OBD1 Coverage (Optional)*
- ☑ *Battery/Charging System Test*
- ☑ *Read TPMS/Tire Pressure*
- ☑ *Hybrid Battery Cell Voltage Readings*
- ☑ *HD Truck Coverage (Optional)*
- ☑ *And Much More...*

Plus, gain the benefit of having unlimited access to real world solutions on your mobile device.

REPAIR SOLUTIONS 2®

Download on the App Store | GET IT ON Google Play

RepairSolutions2® seamlessly pairs with your INNOVA OBD2 Scan Tool to deliver the most complete automotive repair database with verified fixes from ASE Certified Master Technicians. Find the right fix and the right parts instantly on your mobile device.

Enjoy using your INNOVA diagnostic equipment!

Yours sincerely,

The Innova Technical Team

P.S: Connect with us to see what we're up to...

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LEGAL INFORMATION

FCC COMPLIANCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement

- The transmitters within this device must not be co-located or operating in conjunction with any other antenna or transmitter.
- This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. Please follow the operation instructions as documented in this manual to fulfill IC RF exposure compliance requirements.

TRADEMARKS

Title, ownership rights, and intellectual property rights in the Products and Services shall remain in Innova and/or its licensors and other suppliers. Licensee and End Users acknowledge such ownership, confidential information, and intellectual property rights and will not take any action to jeopardize, limit or interfere in any manner with Innova's or its licensors' or other suppliers' ownership of or rights with respect to the Products and Services. The Products and Services may be protected by Patent, Trademark, Copyright and/or other intellectual property laws and by international treaties. All trademarks used in connection with the Products and Services are owned by Innova, its affiliates or its licensors and other suppliers, and no license to use any such trademarks is provided hereunder. Licensee and End Users agree that Innova may use in any manner and without limitation all comments, suggestions, complaints and other feedback Licensee and End Users provide relating to the Products and Services. For more information and current listing of trademarks, please visit https://www.innova.com/pages/trademarks.

PATENTS

Innova Electronics Corp. protects its intellectual property with numerous U.S. patents, which were used to research, design and manufacture this product. Please visit https://www.innova.com/pages/patents for additional information.

FIRMWARE VERSION

Please note that the images and functions in this manual may differ based on the current **Firmware Version (FW)** of your tool. To check your Scan Tool's current version and to check for updates, please refer to **Viewing the Firmware Version**. [See page 56]

CALIFORNIA PRODUCT WARNINGS

⚠WARNING

This product can expose you to chemicals including DiNP, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

SAFETY PRECAUTIONS

SAFETY FIRST!

It is important that every user of this product read all instructions and warnings included in this manual to ensure their safety, the safety of others, and to prevent damage to this product and the vehicle being diagnosed and repaired. This manual describes common test procedures used by experienced service technicians. It is assumed that the user has a good understanding of vehicle systems before using this product.

Many test procedures require precautions to avoid accidents that can result in personal injury, and/or damage to the vehicle or test equipment. At a minimum, the following safety standards should be followed whenever using this product, or whenever working on a vehicle.

- When an engine is running, it produces carbon monoxide, a toxic and poisonous gas. To prevent serious injury or death from carbon monoxide poisoning, **operate the vehicle ONLY in a well-ventilated area.**
- To protect your eyes from propelled objects as well as hot or caustic liquids, **always wear approved safety eye protection.**
- When an engine is running, many parts (such as the coolant fan, pulleys, fan belt, etc.) turn at high speed. To avoid serious injury, **always be aware of moving parts.** Keep a safe distance from these parts as well as other potentially moving objects.
- Engine parts become very hot when the engine is running. To prevent severe burns, **avoid contact with hot engine parts.**
- Before starting an engine for testing or troubleshooting, make sure the parking brake is engaged. **Put the transmission in park** (for automatic transmission) **or neutral** (for manual transmission). **Block the drive wheels** with suitable tire blocks.
- Connecting or disconnecting test equipment when the ignition is ON can damage test equipment and the vehicle's electronic components. **Turn the ignition OFF before connecting the Scan Tool to or disconnecting the Scan Tool from the vehicle's Data Link Connector (DLC).**
- To **prevent damage to the on-board computer** when taking vehicle electrical measurements, always use a digital multimeter with at least 10 Megohms of impedance.
- Fuel and battery vapors are highly flammable. To prevent an explosion, keep all sparks, heated items, and open flames away from the battery and fuel vapors. **DO NOT SMOKE NEAR THE VEHICLE DURING TESTING.**
- **Don't wear loose clothing or jewelry when working on an engine.** Loose clothing can become caught in the fan, pulleys, belts, etc. Jewelry is highly conductive and can cause a severe burn if it makes contact between a power source and ground.

SAFETY ALERT ICONS

Color-coded icons are used through this manual to identify safety alerts and warnings. These are provided to help prevent serious injury to you, injury to bystanders, and damage to property or equipment. The meanings of these icons are as follows:

Yellow Icon – *Indicates a **"NOTE"** statement that offers special information or tips on what is being instructed.*

Orange Icon – *Indicates a potential hazardous situation. Provides a **"WARNING"** statement on how to proceed to avoid serious injury to the user or bystanders, and/or damage to equipment.*

Red Icon – *Identifies an imminent hazardous situation. Provides an immediate **"DANGER"** alert on what must be done to prevent serious injury to the user or bystanders.*

GLOSSARY

OBD2 TERMINOLOGY

The following terms and their definitions are related to OBD2 systems.

- **Powertrain Control Module (PCM)** - The PCM is the OBD2 accepted term for the vehicle's "on-board computer." In addition to controlling the engine management and emissions systems, the PCM also participates in controlling powertrain (transmission) operation. Most PCMs also have the ability to communicate with other computers on the vehicle (ABS, ride control, body, etc.).
- **Monitor** - Monitors are "diagnostic routines" programmed into the PCM. The PCM utilizes these programs to run diagnostic tests, and to monitor operation of the vehicle's emissions-related components or systems to ensure they are operating correctly and within the vehicle manufacturer's specifications. Currently, up to fifteen Monitors are used in OBD2 systems. Additional Monitors will be added as the OBD2 system is further developed.

NOTE: *Not all vehicles support all fifteen Monitors.*

- **Enabling Criteria** - Each Monitor is designed to test and monitor the operation of a specific part of the vehicle's emissions system (EGR system, oxygen sensor, catalytic converter, etc.). A specific set of "conditions" or "driving procedures" must be met before the computer can command a Monitor to run tests on its related system. These "conditions" are known as "**Enabling Criteria**." The requirements and procedures vary for each Monitor. Some Monitors only require the ignition key to be turned "**On**" for them to run and complete their diagnostic testing. Others may require a set of complex procedures, such as starting the vehicle when cold, bringing it to operating temperature, and driving the vehicle under specific conditions before the Monitor can run and complete its diagnostic testing.
- **Complete / Incomplete** - The terms "**Complete**" and "**Incomplete**" are used throughout this manual. "**Complete**" means the PCM **has** commanded a particular Monitor to perform the required diagnostic testing on a system to ensure the system is operating correctly (within factory specifications). The term "**Incomplete**" means the PCM **has not** yet commanded a particular Monitor to perform diagnostic testing on its associated part of the emissions system.
- **Trip** - A Trip for a particular Monitor requires that the vehicle is being driven in such a way that all of the required "Enabling Criteria" for the Monitor to run and complete its diagnostic testing are met. The "Trip Drive Cycle" for a particular Monitor begins when the ignition key is turned "**On**." It is successfully completed when all of the "Enabling Criteria" for the Monitor to run and complete its diagnostic testing are met by the time the ignition key is turned "**Off**." Since each of the fifteen monitors is designed to run diagnostics and testing on a different part of the engine or emissions system, the "Trip Drive Cycle" needed for each individual Monitor to run and complete varies.
- **OBD2 Drive Cycle** - An OBD2 Drive Cycle is an extended set of driving procedures that takes into consideration the various types of driving conditions encountered in real life. These conditions may include starting the vehicle when it is cold, driving the vehicle at a steady speed (cruising), accelerating, etc. An OBD2 Drive Cycle begins when the ignition key is turned "**On**" (when cold) and ends when the vehicle has been driven in such a way as to have all of the "Enabling Criteria" met for all its applicable Monitors. Only those trips that provide the Enabling Criteria for all Monitors applicable to the vehicle to

run and complete their individual diagnostic tests qualify as an OBD2 Drive Cycle. OBD2 Drive Cycle requirements vary from one model of vehicle to another. Vehicle manufacturers set these procedures. Consult the vehicle's service manual for OBD2 Drive Cycle procedures.

NOTE: *Do not confuse a "Trip" Drive Cycle with an OBD2 Drive Cycle. A "Trip" Drive Cycle provides the "Enabling Criteria" for one specific Monitor to run and complete its diagnostic testing. An OBD2 Drive Cycle must meet the "Enabling Criteria" for all Monitors on a particular vehicle to run and complete their diagnostic testing.*

- **Warm-up Cycle** - Vehicle operation after an engine off period where engine temperature rises at least 40°F (22°C) from its temperature before starting, and reaches at least 160°F (70°C). The PCM uses warm-up cycles as a counter to automatically erase a specific code and related data from its memory. When no faults related to the original problem are detected within a specified number of warm-up cycles, the code is erased automatically.

OBD2 MONITORS

To ensure the correct operation of the various emissions-related components and systems, a diagnostic program was developed and installed in the vehicle's on-board computer. The program has several procedures and diagnostic strategies. Each procedure or diagnostic strategy is made to monitor the operation of, and run diagnostic tests on, a specific emissions-related component or system. These tests ensure the system is running correctly and is within the manufacturer's specifications. On OBD2 systems, these procedures and diagnostic strategies are called "Monitors."

Currently, fifteen Monitors are supported by OBD2 systems. Additional monitors may be added as a result of Government regulations as the OBD2 system grows and matures. Not all vehicles support all fifteen Monitors. Additionally, some Monitors are supported by "Spark Ignition" vehicles only, while others are supported by "Compression Ignition" vehicles only.

Monitor operation is either "**Continuous**" or "**Non-Continuous**," depending on the specific monitor.

CONTINUOUS MONITORS

Three of these Monitors are designed to constantly monitor their associated components and/or systems for proper operation. Continuous Monitors run constantly when the engine is running.

CCM = Comprehensive Component Monitor

MIS = Misfire Monitor

FUE = Fuel System Monitor

NON-CONTINUOUS MONITORS

The other twelve Monitors are "non-continuous" Monitors. "Non-continuous" Monitors perform and complete their testing once per trip.

O2S = Oxygen Sensor Monitor

HTR = Oxygen Sensor Heater Monitor

CAT = Catalyst Monitor

HCA = Heated Catalyst Monitor

EGR = EGR (Exhaust Gas Recirculation) System Monitor

EVA = EVAP System Monitor

AIR = Secondary Air System Monitor

NOTE: *The following Monitors became standard beginning in 2010. The majority of vehicles produced before this time will not support these Monitors.*

HCC = NMHC (Non-Methane Hydrocarbon Converting) Catalyst Monitor

NOx = NOx/SCR Aftertreatment Monitor

BPS = Boost Pressure System Monitor

EGS = Exhaust Gas Sensor Monitor

DPF = PM (Particulate Matter) Filter Monitor

ADDITIONAL TERMINOLOGY & ACRONYMS

- **ABS** = Anti-Lock Braking System
- **DLC** = Data Link Connector (vehicle's data port)
- **DTC** = Diagnostic Trouble Code
- **KOEO** = Key On, Engine Off
- **KOER** = Key On, Engine Running
- **MIL** = Malfunction Indicator Light (Check Engine Light)
- **OBD** = On-Board Diagnostics

GLOSSARY

Additional Terminology & Acronyms

- **OBD2 / OBD II** = On-Board Diagnostics, Second Generation
- **OEM** = Original Equipment Manufacturer
- **PID** = Parameter Identification Data
- **SDC** = Since DTCs Cleared
- **SRS** = Supplemental Restraint System
- **TDC** = This Driving Cycle
- **TPMS** = Tire Pressure Monitoring System
- **TSBs** = Technical Service Bulletins

INTRODUCTION

SCAN TOOL CONTROLS AND INDICATORS

See Figure 1 for the locations of items 1 through 22, below.

1. **Display** – Color LCD Display shows menus and submenus, test results, Scan Tool functions and Monitor status information. Refer to Scan Tool Display Functions for more details. [See page 10]
2. **GREEN LED** – Lights to indicate that all engine systems are running normally (all Monitors on the vehicle are active and performing their diagnostic testing, and no DTCs are present).
3. **YELLOW LED** – Lights to indicate there is a possible problem. A "Pending" DTC is present and/or one or more of the vehicle's emission Monitors have not run their diagnostic testing.
4. **RED LED** – Lights to indicate there is a problem in one or more of the vehicle's systems. The red LED is also used to show that DTC(s) are present. DTCs are shown on the Scan Tool's display. In this case, the Malfunction Indicator Light (Check Engine Light) on the vehicle's instrument display illuminates steadily.
5. **Left softkey button** – Selects the left option shown on the display (Yes/No, Previous/Next, etc.).

Figure 1. Controls and Indicators

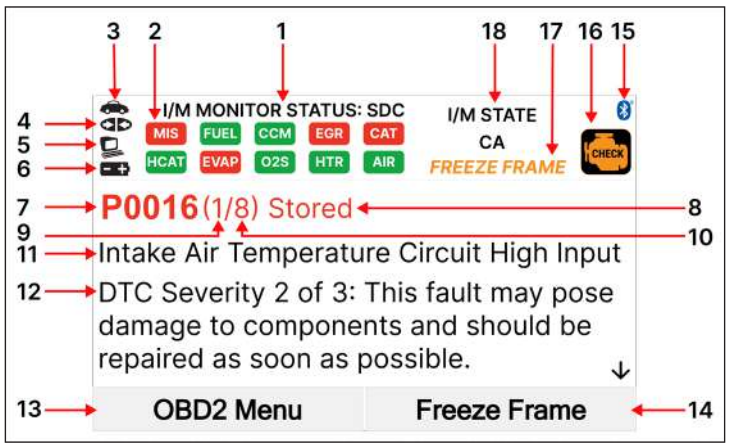
6. **Right softkey button** – Selects the right option shown on the display (Yes/No, Previous/Next, etc.).
7. ▲ **UP button** – When in MENU mode, scrolls UP through the menu options. When LINKED to a vehicle, scrolls UP through the current display screen to display additional data.
8. ↵ **ENTER button** – When in MENU mode, confirms the selected option or value.
9. ▼ **DOWN button** – When in MENU mode, scrolls DOWN through the menu options. When LINKED to a vehicle, scrolls DOWN through the current display screen to display additional data.
10. **ERASE button** – Erases Diagnostic Trouble Codes (DTCs), Freeze Frame data from the vehicle's computer, and resets Monitor status.

11. **SYSTEM MENU button** – When pressed, displays the System Menu.
12. **FF/DTC** – When pressed, displays the DTC View screen and/or scrolls the LCD display to view DTC and Freeze Frame Data.
13. **POWER/LINK button** – When connected to a vehicle, links the Scan Tool to the vehicle's computer.
14. **M button** – When pressed, displays the Main Menu.
15. **LD button** – When pressed while linked to a vehicle, places the Scan Tool in Live Data mode.
16. **OBD2 Cable** (detachable) – Connects the Scan Tool to the vehicle's Data Link Connector (DLC) when retrieving codes from OBD2 systems.
17. **CHRYSLER DLC Adaptor** – Installs on cable (item 22) when connecting to a Chrysler OBD1 Data Link Connector.
18. **FORD DLC Adaptor** – Installs on cable (item 22) when connecting to a Ford OBD1 Data Link Connector.
19. **GM DLC Adaptor** – Installs on cable (item 22) when connecting to a GM OBD1 Data Link Connector.
20. **HONDA DLC Adaptor** – Installs on cable (item 22) when connecting to a Honda OBD1 Data Link Connector.
21. **TOYOTA DLC Adaptor** – Installs on cable (item 22) when connecting to a Toyota OBD1 Data Link Connector.
22. **OBD1 Extension Cable** – Connects the Scan Tool to the various available OBD1 DLC Adaptors. Can also be used to extend the reach of an OBD2 Cable (item 16).

NOTE: *Items 17 through 22 are available with purchase of the optional INNOVA® 3129 OBD1 Kit.*

SCAN TOOL DISPLAY FUNCTIONS

See Figure 2 for the locations of items 1 through 18, below.



1. **I/M MONITOR STATUS: SDC (or I/M MONITOR STATUS: TDC) field** – Identifies the I/M Monitor status area.
2. **Monitor icons** – Indicate which Monitors are supported by the vehicle under test, and whether or not the associated Monitor has run its diagnostic testing (Monitor status). A solid green icon indicates the associated Monitor has completed its diagnostic testing. A flashing red icon indicates that the vehicle supports the associated Monitor, but the Monitor has not yet run its diagnostic testing.

NOTE: *The I/M Monitor Status icons are associated with INSPECTION and MAINTENANCE (I/M) READINESS STATUS. Some states require that all vehicle Monitors have run and completed their diagnostic testing before a vehicle can be tested for Emissions (Smog Check). A maximum of fifteen Monitors are used on OBD2 systems. Not all vehicles support all fifteen Monitors. When the Scan Tool is linked to a vehicle, only icons for Monitors that are supported by the vehicle under test are visible on the display.*

3. **Vehicle icon** – When visible, indicates that the Scan Tool is being powered through the vehicle's DLC connector.
4. **LINK icon** – When visible, indicates the Scan Tool is communicating with the vehicle's computer.
5. **Computer icon** – When visible, indicates the Scan Tool is linked to a personal computer.
6. **Scan Tool Internal Battery icon** – When visible, indicates the Scan Tool batteries are "low" and should be replaced. If the batteries are not replaced when the battery icon is on, all 3 LEDs will light to warn that the batteries need replacement. No data displays on screen when all 3 LEDs are illuminated.
7. **DTC Display Area** – Displays the Diagnostic Trouble Code (DTC) number. Each fault is assigned a code number that is specific to that fault.
8. **Code Number Sequence** – The Scan Tool assigns a sequence number to each DTC that is present in the computer's memory, starting with "1". This number indicates which code is currently displayed. Code number "1" is always the highest priority code, and the one for which "Freeze Frame" data has been stored.

   NOTE: *If "1" is a "Pending" code, there may or may not be "Freeze Frame" data stored in memory.*

9. **Code Type** – Indicates the type of code being displayed: **Stored**, **Pending**, **Permanent**.
10. **Code Enumerator** – Indicates the total number of codes retrieved from the vehicle's computer.
11. **Test Results Area** – Displays DTC definitions, Freeze Frame data and other pertinent test information messages.
12. **Severity** – Indicates the level of severity for the priority code (code number "1"), as follows:

    1: This fault typically does not cause damage to components and should be serviced when convenient.

    2: This fault may result in damage to components and should be repaired as soon as possible.

    3: This fault will cause damage to components and should be repaired immediately.

13. **Left Softkey Function** – Based on the displayed data, provides quick access to specific functions by using the left softkey button.
14. **Right Softkey Function** – Based on the displayed data, provides quick access to specific functions by using the right softkey button.
15. **Bluetooth icon** – Indicates communication status with a compatible INNOVA® mobile application. A solid blue icon indicates an active Bluetooth connection has been established.
16. **SYSTEM icon** – Indicates the system with which the Diagnostic Trouble Code is associated:

MIL icon **ABS icon** **SRS icon**

17. **FREEZE FRAME icon** – Indicates that there is Freeze Frame data stored in the vehicle's computer memory. (captured when Priority Code was set / Code number 1)
18. **I/M State** – Displays the acronym of Smog Check or I/M Program location.

SCAN TOOL BATTERY REPLACEMENT

Replace batteries when the battery symbol is visible on the display and/or the screen displays a warning message: "*Batteries are low, the tool will auto shut off. Please replace batteries before continuing.*"

1. Locate the battery cover on the back of the Scan Tool.
2. Slide the battery cover off with your fingers.
3. Replace batteries with three (3) AA-size batteries (for longer life, use Alkaline-type batteries).
4. Reinstall the battery cover on the back of the Scan Tool.

INITIAL SETUP

The first time the Scan Tool is plugged into the vehicle, it is necessary to complete tool setup by performing the following steps:

1. Select the desired display language, then press **ENTER** ↵.
   - The Select Unit screen displays.
2. Select the desired unit of measurement, then press **ENTER** ↵.
   - The Smog Check or I/M Program Location screen displays.
3. Select the desired state, then press **ENTER** ↵.
   - The next screen displays the Smog Check or I/M Program LED Definition. Press **ENTER** ↵ to skip.
4. In the next screen, a QR code to RepairSolutions2® (RS2) displays. Using any mobile device, scan the code to download and install the free RS2 app. The app offers additional information including Most Likely Component/ System Cause for DTC, Repair Tip, and much more.

NOTE: *After selecting the display language and unit of measurement, you can change them and other settings in the Tool Settings menu.* *[See page 58]*

THE REPAIRSOLUTIONS2® (RS2) APP

Innova's RepairSolutions2® (RS2) is a web-based service created to assist Do-it-Yourselfers and Professional technicians simplify their vehicle diagnostic process. In essence, RS2 helps you decode the diagnostic data collected by your INNOVA® OBD2 Scan Tool to arrive at a most likely fix. At its core, RS2 uses a database of millions of real-world verified fixes–collected over the last 25 years by ASE Master Technicians across the U.S.– that is cross-referenced to your specific vehicle's problem to instantly arrive at a verified fix. Think of RS2 as your personalized technician to help diagnose, repair, and maintain your vehicle(s).

THE RS2 APP GIVES YOU...

- **Verified Fixes** – Find the most likely fixes reported and verified by ASE Technicians for the retrieved DTCs. Plus, quickly purchase the exact parts you need right from the app.
- **Predicted Repairs** – With millions of verified repair solutions, get a statistical probability of what repairs the vehicle may need within the next 12 months.
- **TSBs & Recalls** – Learn if there are any special NHTSA safety recalls or Technical Service Bulletins (TSBs) issued by the vehicle's manufacturer.
- **Vehicle Health Reports** – Get a quick insight on how the vehicle's vitals are currently performing (e.g., oil life, brake pad life, battery status, etc.) and get alerts to potential problems.
- **Upcoming Maintenance** – View the vehicle manufacturer's recommended maintenance intervals. Plus, conveniently purchase the correct maintenance parts right from the app.
- **And much more**...

HARDWARE REQUIREMENTS

- Innova Scan Tool with Bluetooth connectivity.
- Android or iOS Mobile Device.

DOWNLOAD THE RS2 APP

- **Apple iOS Devices** (click the link)

  Download on the App Store

- **Android Devices** (click the link)

  GET IT ON Google Play

- **From an INNOVA Scan Tool**
  - Scan the QR Code displayed on the tool's screen when retrieving for OBD2 DTCs.

USING THE RS2 APP

1. Retrieve the vehicle's diagnostic data. [See page 16]
2. Download and install the RepairSolutions2 app (see above).
3. Launch the **RS2 app** and log in to your account.
   - If you have not yet established an account, you must register for a FREE RS2 account before proceeding.
4. Follow the on-screen prompts to pair your INNOVA Scan Tool. Be sure your mobile device is connected to an available Wi-Fi network.
   - Begin the pairing process by selecting your tool from the list.

   NOTE: *The RS2 app can only store up to two Wi-Fi configurations.*
5. Once paired, the data from your tool is automatically transferred to the RS2 app to create a report.

   NOTE: *If the data does not automatically transfer, simply keep the app and tool paired and scan the vehicle again.*

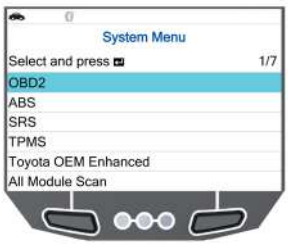
THE SYSTEM MENU

The **System Menu** provides enhanced OEM-level diagnostics that are not available over generic OBD2. Access ABS, Airbag, Transmission, Tire Pressure, Battery, and all modules to view and erase their DTCs. Perform bi-directional tests on fuel pump, injectors, ignition coils, and much more. The types of enhanced data available depends on the vehicle make. You can also return to the Global OBD2 mode.

NOTE: *Depending on the vehicle under test, some features and functions may not be available.*

To access the System Menu, press **SYSTEM MENU** . Select the desired option, then press **ENTER** ↵ to view the selected information.

- **To view the OBD2 Menu:** Select **OBD2** from the System Menu. [See page 16]
- **To perform ABS/SRS/TPMS Diagnostics**: Select **ABS**, **SRS**, or **TPMS** from the System Menu. [See page 35]
- **To perform OEM Enhanced Diagnostics**: Select **[Make] OEM Enhanced** from the System Menu. [See page 37]
- **To perform a Network Scan**: Select **All Module Scan** or **Module Selection**, as desired. [See page 42]



THE MAIN MENU

You can use the Scan Tool to perform additional diagnostic tests, view diagnostic and vehicle information stored in the vehicle's on-board computer, and configure the Scan Tool for your particular needs. These functions are accessed through the Main Menu **[M]**. The following functions are available:

- **Service Reset** – Perform several OEM services, including Oil Maintenance Reset, Battery Reset, Battery Initialization, EV/HEV/PHEV Battery Health, Battery/Alternator Test, Electronic Parking Brake Reset, etc. Access dealership level relearn procedures to complete repairs or maintenance and much more. [See page 47]
- **Service Check** – Lets you view the current engine oil level and oil life remaining, brake pad life and transmission fluid temperature. [See page 52]
- **EV/HEV/PHEV Battery Health, Battery/Alternator Test** – Performs a check of the vehicle's battery and alternator system (or hybrid/EV battery system) to ensure the system is operating within acceptable limits. [See page 52]
- **DLC Locator** – Lets you find the location of the Data Link Connector (DLC) for a specified vehicle. [See page 55]
- **Firmware Version** – Displays the Scan Tool's firmware version. [See page 56]
- **Tool Library** – Displays the Tool Library menu, which provides access to OBD1 and OBD2 DTC libraries and to definitions for Monitor icons and LED indicators. [See page 56]
- **Tool Settings** – Displays the Tool Settings menu, which lets you make several adjustments and settings to configure the Scan Tool to your particular needs. [See page 58]

USING THE SCAN TOOL

RETRIEVING OBD2 DIAGNOSTIC TROUBLE CODES

Never replace a part based only on the DTC definition. Each DTC has a set of testing procedures, instructions, and flow charts that must be followed to confirm the location of the problem. Always refer to the vehicle's service manual for detailed testing instructions.

NOTE: *Check the vehicle thoroughly before performing any test.*

WARNING: ALWAYS *observe safety precautions whenever working on a vehicle.*

AUTO-LINK CONNECTION

The Scan Tool features an "Auto-Link Connection" function, which automatically retrieves vehicle information and diagnostics from the OBD2 system connecting the Scan Tool to the vehicle's Data Link Connector (DLC) port.

1. Turn the vehicle's ignition **OFF**.
2. Locate the vehicle's 16-pin Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting to the Scan Tool.*

3. Connect the Scan Tool to the vehicle's DLC. The cable connector is keyed and will only fit one way.
   - If you have problems connecting the cable to the DLC, rotate the connector 180°.
   - If you still have problems, check the DLC on the vehicle and on the Scan Tool.
4. Turn the ignition on. **DO NOT** start the engine.
5. When the Scan Tool is properly connected to the vehicle's DLC, the unit automatically turns **ON**.
   - If the unit does not power on automatically, it may indicate there is no power present at the vehicle's DLC connector. Check the fuse panel and replace any burned-out fuses.
   - If replacing the fuse(s) does not correct the problem, consult the vehicle's repair manual to identify the proper computer (PCM) fuse/ circuit, and perform any necessary repairs before proceeding.

6. The Scan Tool automatically checks the vehicle's computer to determine which communication protocol it is using.
   - The Scan Tool begins to "**AUTO-LINK**" to identify computer's communication protocol. A progress bar displays while a communication link is established.

NOTE: *A PROTOCOL is a set of rules and procedures for regulating data transmission between computers, and between testing equipment and computers. As of this writing, five different types of protocols (ISO 9141, Keyword 2000, J1850 PWM, J1850 VPW and CAN) are in use by vehicle manufacturers.*

- If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" message displays.
  - — Ensure the vehicle is OBD2-compliant.
  - — Verify the connection at the DLC, and verify the ignition is **ON**.
  - — Turn the ignition **OFF**, wait 5 seconds, then turn back **ON** to reset the computer.
  - — Press **POWER/LINK** to try again, or select **SYSTEM MENU** to return to the System Menu.
- If the Scan Tool cannot link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.
  - — Press **SYSTEM MENU** to return to the System Menu.
  - — Turn the ignition off, and disconnect the Scan Tool.
  - — Contact Technical Support for assistance.

7. The screen displays the RS2 QR code. Using any mobile device, scan the code to download and install the free RS2 app.

- Press the **Skip** softkey to continue.
- Press the **Don't show again** softkey to tick the checkbox, then press the **Skip** softkey to continue.

NOTE: *You can toggle this screen on or off in Settings. [See page 60]*

8. If the Scan Tool ***can*** decode the Vehicle Identification Number (VIN) for the vehicle under test, the OBD2 results screen displays. Proceed to **step 10**.

9. If the Scan Tool ***cannot*** decode the Vehicle Identification Number (VIN) for the vehicle under test, one of the following will result:

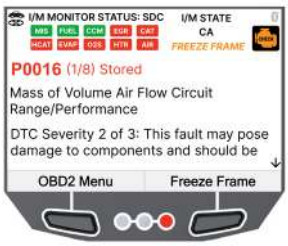
- If the vehicle ***has*** stored OEM Diagnostic Trouble Codes (DTCs), the "Select Make" screen displays.
  - — Use **UP** ▲ or **DOWN** ▼ to select the desired vehicle, then press **ENTER** ↵. Proceed to **step 10**.
- If the vehicle ***does not*** have OEM Diagnostic Trouble Codes, the screen displays results as "Global OBD2". Proceed to **step 10**.

10. After approximately 2~3 seconds, the Scan Tool will retrieve and display any Diagnostic Trouble Codes (DTCs), Monitor Status and Freeze Frame Data retrieved from the vehicle's computer memory.

- The Scan Tool will display one code at a time if codes are present. If no codes are present, the message "No Powertrain DTCs or Freeze Frame Data is presently stored in the vehicle's computer" displays.

11. Refer to **Scan Tool Display Functions** for a description of display elements. [See page 10]

NOTE: *In the case of long code definitions, a small arrow is shown in the upper/lower right-hand corner of the display area to indicate the presence of additional information.*



NOTE: *If a definition for the currently displayed code is not available, an "advisory" message displays.*

12. Each time the **FF/DTC** button is pressed, the Scan Tool will scroll and display the next DTC in sequence until all DTCs in its memory display.

NOTE: *If more than one malfunction is present that causes more than one DTC to be set, only the code with the highest priority will contain Freeze Frame data. The code designated "01" on the Scan Tool display is referred to as the PRIORITY code, and Freeze Frame data always refers to this code. The priority code is also the one that has commanded the MIL (Check Engine Light) on.*

- When the last retrieved DTC has displayed and the **FF/DTC** button is pressed, the Scan Tool returns to the "Priority" Code.

13. Determine the engine system(s) condition by viewing the display for any retrieved Diagnostic Trouble Codes, code definitions and Freeze Frame data, and interpreting the green, yellow, and red LEDs.

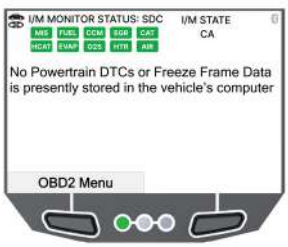
- If DTCs were retrieved and you are going to perform the repairs yourself, proceed by consulting the vehicle's service repair manual for testing instructions, testing procedures, and flow charts related to retrieved code(s).
- Reference the RS2 app for verified fixes and additional diagnostic information.

NOTE: *To prolong battery life, the Scan Tool automatically shuts **OFF** approximately three minutes after it is disconnected from the vehicle. The DTCs retrieved, Monitor Status and Freeze Frame data (if any) remain in the Scan Tool's memory, and may be viewed at any time by turning the unit **ON**. If the Scan Tool's batteries are removed, or if the Scan Tool is re-linked to a vehicle to retrieve codes/data, any prior codes/data in its memory are automatically cleared.*

LED LIGHT DEFINITION

Read and interpret Diagnostic Trouble Codes/system condition using the display and the green, yellow, and red LEDs.

NOTE: *The green, yellow, and red LEDs are used (with the display) as visual aids to make it easier to determine engine system conditions.*

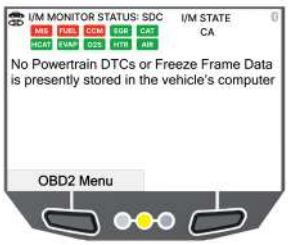


- **Green LED** – Indicates that all engine systems are "OK" and operating normally. All Monitors supported by the vehicle have run and performed their diagnostic testing, and no trouble codes are present. All Monitor icons will be solid.

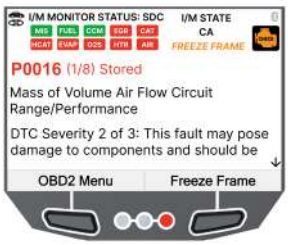
- **Yellow LED** – Indicates one of the following conditions:

  [A] A PENDING CODE IS PRESENT – If the yellow LED is illuminated, it may indicate a Pending code is present. Check the display for confirmation. A Pending code is confirmed by the presence of a numeric code and the word Pending.

  [B] MONITOR NOT RUN STATUS – If the display shows the "No Powertrain DTCs or Freeze Frame Data is presently stored in the vehicle's computer" message, but the yellow LED is illuminated, it may be an indication that some of the Monitors supported by the vehicle have not yet run and completed their diagnostic testing. Check the display for confirmation. All Monitor icons that are blinking have not yet run and completed their diagnostic testing; all Monitor icons that are solid have run and completed their diagnostic testing.



- **Red LED** – Indicates there is a problem with one or more of the vehicle's systems. The red LED is also used to indicate that DTC(s) are present. In this case, the Malfunction Indicator Light (Check Engine Light) on the vehicle's instrument display will be illuminated.



NOTE: *DTCs that start with "P0", "P2" and some "P3" are considered Generic (Universal). All Generic DTC definitions are the same on all OBD2-equipped vehicles. The Scan Tool automatically displays the code definitions (if available) for Generic DTCs.*

NOTE: *DTCs that start with "P1" and some "P3" are Manufacturer specific codes – their code definitions will vary with each vehicle manufacturer.*

MONITOR ICON STATUS

The I/M Monitor Status icons are associated with INSPECTION and MAINTENANCE (I/M) READINESS STATUS. Some states require that all vehicle Monitors have run and completed their diagnostic testing before a vehicle can be tested for Emissions (Smog Check). A maximum of fifteen Monitors are used on OBD2 systems. Not all vehicles support all fifteen Monitors. When the Scan Tool is linked to a vehicle, only the icons for Monitors that are supported by the vehicle under test are visible on the display.

Green Solid Icon = MIS

- **Description:** This icon indicates the Monitor has completed both Since DTCs Cleared (KOEO) and This Driving Cycle (KOER) testing.
- **Tips:** The Monitor has met all conditions required to complete self-diagnosis and testing of the assigned system.

Red Flashing Icon = MIS

- **Description:** This icon indicates that the Monitor has not completed testing Since DTCs Cleared (KOEO).

- **Tips:** The Monitor has not met all conditions required to complete self-diagnosis and testing of the assigned system. A drive cycle may need to be performed to complete the testing.

Green/Gray Solid Icon = MIS

- **Description:** This icon indicates that the Monitor has not completed testing This Driving Cycle (KOER).
- **Tips:** The Monitor has not met all conditions required to complete self-diagnosis and testing of the assigned system. A drive cycle may need to be performed to complete the testing.

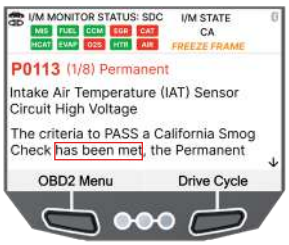
Red/Gray Solid Icon = MIS

- **Description:** This icon indicates that the Monitor has been disabled This Driving Cycle (KOER).
- **Tips:** The Monitor is unable to complete self-diagnosis and testing of the assigned system. The Monitor is disabled for this driving cycle, check for failed OBD Monitor Test and refer to the service information before continuing.

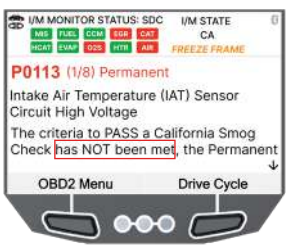
PERMANENT DIAGNOSTIC TROUBLE CODE (PDTCS)

For vehicles from 2010, meeting specific Permanent DTCs (PDTCs) criteria is a new requirement of the Smog Check program in California. Permanent DTCs are similar to regular DTCs, but they cannot be reset by disconnecting the vehicle's battery or cleared with an On-Board Diagnostic Scan Tool. PDTCs will only be ignored if the vehicle has completed at least 15 warm-up cycles and driven at least 200 miles since its OBD information was last cleared.

1. If the vehicle meets the criteria to pass the Smog Check, the Permanent DTCs will be ignored.



2. If the vehicle does not meet the criteria to pass the Smog Check, follow the Drive Cycle procedure to ensure it meets the requirements for PDTC(s) to be ignored.



OBD2 MENU

OBD2 Diagnostics provides access to all **10 modes of OBD2**. The following functions are available:

- **I/M Readiness Status – PIDs $01 & $41** [See page 21]
- **Read DTCs – Modes $03, $07 & $0A** [See page 16]
- **Erase DTCs – Mode $04** [See page 22]
- **Freeze Frame – Mode $02** [See page 23]
- **Live Data – Mode $01** [See page 23]
- **O2 Sensor Monitor – Mode $05** [See page 30]
- **OBD Monitor Test – Mode $06** [See page 30]
- **Request Control On-Board System – Mode $08** [See page 31]
- **Drive Cycle Procedures** [See page 32]
- **Vehicle Information – Mode $09** [See page 33]

I/M READINESS STATUS - PIDS $01 & $41

The vehicle's computer stores a record of Monitor status upon completion of a full diagnostic check of all Monitored components and systems since the computer's memory was last cleared.

The **I/M Readiness Status - PIDs $01 & $41** function displays which particular vehicle Monitors have or have not run and completed testing of their designated sections within the vehicle's emissions control system. Additionally, it provides the descriptions for each Monitor.

1. From the Diagnostic Trouble Codes (DTCs) screen, press the **OBD2 Menu** softkey, then select **I/M Readiness Status – PIDs $01 & $41** and press **ENTER** ↵.
2. A "One moment please..." message displays, followed by a selection dialog. Select **Since DTCs Cleared** or **This Driving Cycle** as desried and press **ENTER** ↵.
   - If the vehicle under test does not support **Since DTCs Cleared** or **This Driving Cycle**, a warning message displays "*This vehicle does not support this Monitor type.*" Press the **Back** softkey to return.
3. The Select Monitor screen displays listing all Monitors supported by the vehicle.
4. To view a Monitor description, select the desired **Monitor** and press **ENTER** ↵.
   - A description for the selected Monitor displays.
5. To view Drive Cycle Procedures for a Monitor, select the desired **Incomplete Monitor** and press the **Drive Cycle** softkey.

NOTE: *If Drive Cycle Procedures are not available for the vehicle, an "advisory" message displays. Press the* ***Back*** *softkey to return.*

- The Drive Cycle Procedures screen for the Monitor displays.

6. The Drive Cycle Procedure screen displays the specific set of operating procedures that ensure the vehicle is driven in such a way that all of the required "Enabling Criteria" for the Monitor to run and complete its diagnostic testing are met.
7. When you finish viewing the Drive Cycle Procedures, press the the **Back** softkey to return.

ERASE DTCS - MODE $04

NOTE: *When the Scan Tool's ERASE function is used to erase DTCs from the vehicle's on-board computer, "Freeze Frame" data and manufacturer-specific-enhanced data are also erased. "Permanent" DTCs ARE NOT erased by the ERASE function.*

If you plan to take the vehicle to a Service Center for repair, **DO NOT** erase the codes from the vehicle's computer. If the codes are erased, valuable information that might help the technician troubleshoot the problem will also be erased.

Erase DTCs from the computer's memory as follows:

NOTE: *When DTCs are erased, the I/M Readiness Monitor Status program resets the status of all Monitors to a not run condition. To set all Monitors to a Complete status, an OBD2 Drive Cycle must be performed.*

1. Perform the **Retrieving OBD2 Diagnostic Trouble Codes** procedure. [See page 16]
   - Wait until the codes are displayed.
2. Press **ERASE**. A "confirmation" message displays.
   - If you are sure you want to proceed, press the **Erase DTCs** softkey to continue.
   - If you do not want to proceed, press the Left softkey cancel the erase procedure.
3. If you chose to erase DTCs, a "One moment please…" message displays while the erase function is in progress.

NOTE: *If the vehicle's engine is running, an "advisory" message displays. Turn the engine **OFF**, then turn the ignition back to **ON. DO NOT** start the engine. Press **ERASE** to continue.*

- If the **erase was successful**, a "confirmation" message displays. The Scan Tool automatically relinks to the vehicle's computer after 3 seconds.

NOTE: *If the **erase was not successful** and ECU error code $22 is present, an "advisory" message displays. Start the engine and maintain vehicle speed at 0. Press **ERASE** to try again.*

- If the erase was not successful, an "advisory" message displays indicating the erase request was sent to the vehicle's computer. The Scan Tool automatically relinks to the vehicle's computer after 3 seconds.

NOTE: *Please be aware that erasing DTCs will not resolve the problem(s) that caused the code(s) to be set. If proper repairs to correct the problem that caused the code(s) to be set are not made, the code(s) will display again (and the Malfunction Indicator Light will illuminate) as soon as the vehicle is driven long enough for its Monitors to complete their testing.*

FREEZE FRAME - MODE $02

In OBD2 systems, when an emissions-related engine malfunction occurs that causes a DTC to set, a record or snapshot of engine conditions at the time that the malfunction occurred is also saved in the vehicle's computer memory. The record saved is called Freeze Frame data. Saved engine conditions include, but are not limited to: engine speed, open or closed loop operation, fuel system commands, coolant temperature, calculated load value, fuel pressure, vehicle speed, air flow rate, and intake manifold pressure.

1. From the **OBD2 Menu**, select **Freeze Frame – Mode $02** and press **ENTER** ↵. Or from the OBD2 DTCs screen, press the **Freeze Frame** softkey if available.
   - Freeze Frame data for the "priority" DTC displays. If no Freeze Frame data is currently stored in the vehicle's computer, a message displays.

NOTE: *If more than one malfunction is present that causes more than one DTC to be set, only the code with the highest priority will contain Freeze Frame data. The code designated "01" on the Scan Tool display is referred to as the PRIORITY code and Freeze Frame data always refers to this code. The priority code is also the one that has commanded the MIL (Check Engine Light) on.*

2. To view a description of the currently selected PID in **Freeze Frame** data, press the **PID Desc.** softkey.
3. Press the **OBD2 Menu** softkey to return to the OBD2 Menu.

LIVE DATA - MODE $01

The Scan Tool lets you view and/or record "real-time" Live Data. This information includes values (volts, rpm, temperature, speed, etc.) and system status information (open loop, closed loop, fuel system status, etc.) generated by the various vehicle sensors, switches, and actuators. These are the same signal values generated by the sensors, actuators, and switches, and/or vehicle system status information used by the vehicle's computer when calculating and conducting system adjustments and corrections.

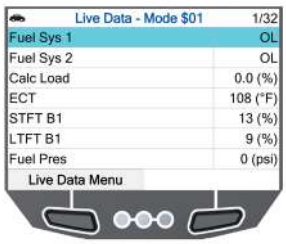
The real time (Live Data) vehicle operating information (values/status) that the computer supplies to the Scan Tool for each sensor, actuator, switch, etc. is called Parameter Identification (PID) Data.

Each PID (sensor, actuator switch, status, etc.) has a set of operating characteristics and features (parameters) that serve to identify it. The Scan Tool displays this information for each sensor, actuator, switch, or status that is supported by the vehicle under test.

DANGER: *If the vehicle must be driven in order to perform a troubleshooting procedure, ALWAYS have a second person help you. One person should drive the vehicle while the other person observes the Scan Tool data. Trying to drive and operate the Scan Tool at the same time is dangerous, and could cause a serious traffic accident.*

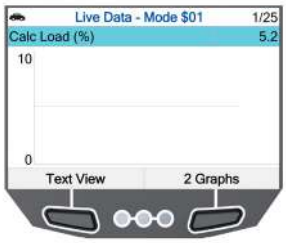
Viewing Live Data

1. While linked to the vehicle, start the engine, then press **LD**.
2. A "One moment please..." message displays while the Scan Tool establishes communication with the vehicle.
   - If the Scan Tool fails to establish communication with the vehicle, a "Communication Error" message displays.
     - Ensure the vehicle is OBD2 compliant.
     - Verify the connection at the DLC, and verify the ignition is **ON**.
     - Turn the ignition **OFF**, wait 5 seconds, then turn back **ON** to reset the computer.
     - Press **ENTER** ↵ to continue.
3. Real-time Live Data (PID) information supported by the vehicle under test displays.
   - If Live Data is not supported by the vehicle under test, an "advisory" message displays. Press **M** to return to the Main Menu, or press **SYSTEM MENU** Ⓢ to return to the System Menu.



NOTE: *The values for the various PIDs displayed may change as the vehicle's operating conditions change.*

4. Only a limited amount of PID data can be displayed on the screen at one time. If additional PID data is available, a small arrow is shown on the display. Press **UP** ▲ and **DOWN**, ▼ as necessary, to view all available PID data.
   - If communication with the vehicle is lost while viewing Live Data, an "advisory" message displays.
5. Press the **Graph** softkey to view the currently selected PID in "graph" mode. Some PIDs do not support viewing in a graph.
   - The Scan Tool can display a maximum of four PIDs in "graph" mode at any given time.
   - With four PIDs shown in "graph" mode, press **UP** ▲, **DOWN** ▼, and **ENTER** ↵ to select, then press the **Superimpose** softkey to see one graph over the other.
     - Press the **4 Graphs** softkey to separate the graphs.



6. Press and hold **ENTER** ↵ to view the "expanded" definition for the currently selected PID. Press the **Back** softkey to return to the PID list.

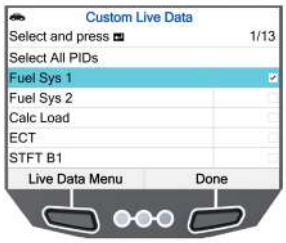
NOTE: *If desired, you can "customize" the Live Data display to show only those PIDs you are interested in viewing. See Customizing Live Data (PIDs) below for details. You may also choose to Record Live Data for later viewing.* *[See page 26]*

Customizing Live Data (PIDs)

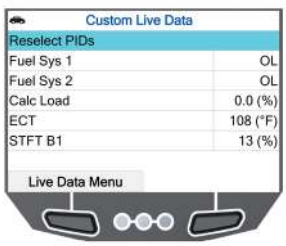
You can customize the **Live Data** display by placing the Scan Tool in **Custom Live Data** mode and selecting only the PIDs that you wish to display.

1. With the Scan Tool in Live Data mode [See page 23], press **LD** to access the Live Data Menu.
2. Select **Custom Live Data**, then press **ENTER** ↵.

   - If the Scan Tool fails to establish communication with the vehicle, a "Communication Error" message displays.
     - — Ensure the vehicle is OBD2 compliant.
     - — Verify the connection at the DLC, and verify the ignition is **ON**.
     - — Turn the ignition **OFF**, wait 5 seconds, then turn back **ON** to reset the computer.
     - — Press **POWER/LINK** ⏻ to continue.
   - If Live Data is not supported by the vehicle under test, an "advisory" message displays. Press **SYSTEM MENU** Ⓢ to return to the System Menu.
   - If Custom Live Data was previously selected and configured, then a selection screen displays.
     - — To use the existing custom Live Data selections, select **Use existing PIDs**, then press **ENTER** ↵. Proceed to **step 5**.
     - — To configure new custom Live Data, select **Select new PIDs**, then press **ENTER** ↵. The Custom Live Data menu displays. Proceed to **step 3**.
   - If custom Live Data was not previously selected, the Custom Live Data menu displays. Proceed to **step 3**.
3. Press **UP** ▲ and **DOWN** ▼ to scroll through the available PIDs. When a PID you wish to display is highlighted, press **ENTER** ↵ (a "checkmark" displays to confirm your selection). Repeat until only the PIDs you want to display are selected.



   - To deselect a PID, highlight the PID, then press **ENTER** ↵. The checkmark is removed.
4. When you finish making your selection(s), press the **Done** softkey to continue.
   - If no PIDs have been selected, an "advisory" message displays. Press **ENTER** ↵ to return to the Custom Live Data menu.
5. The Scan Tool is now in Custom Live Data mode. Only the PIDs you selected are shown.



   - To change the current Custom Live Data selections, select **Reselect PIDs**, then press **ENTER** ↵ to return to the Custom Live Data menu. Repeat **step 3**.
6. To exit the "Custom Live Data" mode, press **LD** to return to the Live Data Menu.

Recording (Capturing) Live Data

You can record and save several frames of Live Data information for each PID supported by the vehicle in the Scan Tool's memory.

There are two ways that the Scan Tool can record Live Data:

- Record by DTC Trigger
- Record Manually

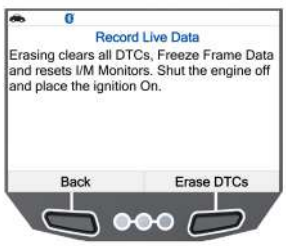
NOTE: *If the* ***POWER/LINK*** *button is pressed at any time while in Live Data mode, the Scan Tool will relink, and any recorded Live Data is erased from the Scan Tool's memory.*

Record by DTC Trigger

This function automatically records Live Data information when a DTC sets and saves it in the Scan Tool's memory. The recorded data can be a valuable troubleshooting aid, particularly if you are experiencing a fault that is causing a DTC to set. The Scan Tool can record approximately 100 frames of Live Data.

1. With the Scan Tool in Live Data mode [See page 23], press **LD** to access the Live Data Menu.
2. Select **Record by DTC Trigger**, then press **ENTER** ↵.
   - The Record Live Data Menu displays.
   - If the Scan Tool fails to establish communication with the vehicle, a "Communication Error" message displays.
     - Ensure the vehicle is OBD2 compliant.
     - Verify the connection at the DLC, and verify the ignition is **ON**.
     - Turn the ignition **OFF**, wait 5 seconds, then turn back **ON** to reset the computer.
     - Press **POWER/LINK** to continue.
3. Press **UP** ▲ and **DOWN** ▼ to scroll through the available PIDs. When a PID you wish to record is highlighted, press **ENTER** ↵ (a "checkmark" displays to confirm your selection). Repeat until only the PIDs you want to record have all been selected.
   - To deselect a PID, highlight the PID, then press **ENTER** ↵. The checkmark is removed.

4. When you finish making your selections, press the **Done** softkey to continue.
   - If DTCs are presently stored in the vehicle's computer, an "advisory" message displays. Select **Erase DTCs**. A "One moment please…" message displays while DTCs are erased from the vehicle's computer.
   - If the erase was not successful, an "advisory" message displays.
     - To retry the erase process, verify that the Scan Tool is properly connected to the vehicle's DLC and that the ignition is on. Select **Erase DTCs**.



— To exit the record function, select the **Back** softkey to return to the Record Live Data menu.

- The Record Live Data screen displays.

5. Put the engine in the operating condition that causes the DTC to set.
   - If necessary, drive the vehicle until you reach the vehicle speed at which the problem occurs.
6. When the Scan Tool detects a fault that causes a DTC to set, it automatically records and saves approximately 100 frames of Live Data information in its memory for each PID selected.
   - A progress message displays while recording is in progress.
     — You can stop and save recorded Live Data at any time by pressing the **Stop/Save** softkey.

7. When recording is complete, a "confirmation" screen displays. Select the **Yes** softkey to Playback Live Data [See page 28] or select the **No** softkey to return to the Live Data menu.
   - If recording was not successful, an "advisory" message displays. Press **LD** to return to the Live Data menu.

Record Manually

This option lets you select the precise time at which Live Data recording will occur. Recording Live Data manually can be a very valuable tool when troubleshooting intermittent problems that do not meet the requirements for a DTC to set. The Scan Tool can record approximately 100 frames of Live Data.

1. With the Scan Tool in Live Data mode [See page 23], press **LD** to access the Live Data Menu.
2. Select **Record Manually**, then press **ENTER** ↵.
   - The Record Live Data Menu displays.
   - If the Scan Tool fails to establish communication with the vehicle, a "Communication Error" message displays.
     — Ensure the vehicle is OBD2 compliant.
     — Verify the connection at the DLC, and verify the ignition is **ON**.
     — Turn the ignition **OFF**, wait 5 seconds, then turn back **ON** to reset the computer.
     — Press **POWER/LINK** ⏻ to continue.

3. Press **UP** ▲ and **DOWN** ▼ to scroll through the available PIDs. When a PID you wish to record is highlighted, press **ENTER** ↵ (a "checkmark" displays to confirm your selection). Repeat until only the PIDs you want to record have all been selected.
   - To deselect a PID, highlight the PID, then press **ENTER** ↵. The checkmark is removed.
4. When you finish making your selections, press the **Done** softkey to continue.
   - The Record Live Data screen displays.
   - Put the engine in the operating condition where the problem manifests itself.

— If necessary, drive the vehicle until you reach the vehicle speed at which the problem occurs.

5. When the problem occurs, choose **Record**.
   - A progress message displays while recording is in progress.
     — You can stop and save recorded Live Data at any time by pressing the **Stop/Save** softkey.

6. When recording is complete, a "confirmation" screen displays. Select the **Yes** softkey to Playback Live Data [See page 28] or select the **No** softkey to return to the Live Data menu.
   - If recording was not successful, an "advisory" message shows on the display. Press **LD** to return to the Live Data menu.

Playback Live Data

Once Live Data has been recorded, it is saved in the Scan Tool's memory. You can view recorded Live Data immediately after recording by pressing **Yes** from the Record Live Data "confirmation" screen [See page 26], or you can view it later using the Playback function.

NOTE: *When you select **Yes** from the Record Live Data "confirmation" screen, the Scan Tool enters the Live Data Playback mode, and the Playback Live Data menu displays.*

1. With the Scan Tool not connected to a vehicle, press **POWER/LINK**.
   - The Vehicle Selection screen displays. Use the **UP** ▲ and **DOWN** ▼ to select the desired vehicle.
   - Select **Global OBD2** and press **ENTER** ↵.
   - Press the **LD** button. Proceed to **step 3**.
2. With the Scan Tool connected to the vehicle and in Live Data mode [See page 23], press **LD** to access the Live Data Menu.
3. Select **Playback Live Data**, then press the **ENTER** ↵.
   - The Playback Live Data menu displays.

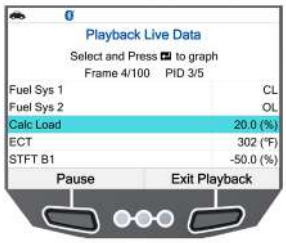
NOTE: *If there is no Live Data currently stored in the Scan Tool's memory, an "advisory" message displays.*

4. Select **Continuous Playback** or **Frame by Frame**, as desired, then press **ENTER** ↵.
   - The display shows the recorded Live Data, beginning with the "trigger" frame.
   - Only a limited amount of PID data can be displayed on the screen at one time. If additional PID data is available, a small arrow is shown on the display. Press **UP** ▲ or **DOWN** ▼, as necessary, to view all available PID data.

- When viewing recorded Live Data, look for irregularities in any of the PID values/signal information (LTFT %, RPM, MAP, TEMP, etc.). If any PIDs are not within specification, or irregularities are detected, follow the procedures in the vehicle's service repair manual to perform additional troubleshooting and repair.

5. When you select **Continuous Playback**, the Scan Tool plays recorded data at a rate of one frame / 2 seconds.

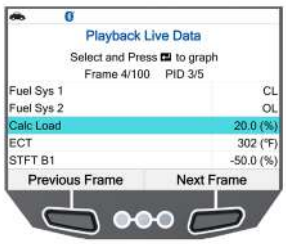
- To view the recorded data in graph mode, press **ENTER** ↵.



  - Press **UP** ▲ and **DOWN** ▼ to scroll and view each available recorded PID in graph mode.
  - Press **ENTER** ↵ a second time to view ***2 Graphs***, and a third time to view ***4 Graphs*** on a single screen.
  - To Superimpose PID values (for comparison purposes), press **UP** ▲ or **DOWN** ▼ to scroll to the desired PID and press **ENTER** ↵ to select it – selected item is highlighted in black. Once all PID selections are completed, press and hold **LD**.
- Select **Pause**, to "pause" the Live Data playback. Select **Play** to resume the playback.
- Select **Exit Playback** to exit the Live Data Playback mode and return to the Playback Live Data menu.
- Once playback finishes, the tool automatically returns to the Playback Live Data menu.
  - To play the data back again, select **Continuous Playback** or **Frame by Frame**, as desired, then press **ENTER** ↵.

6. When **Frame by Frame** is selected, you must scroll the individual frames manually.

- When you have viewed all PID information for the current frame of Live Data, choose **Next Frame** or **Previous Frame**, as desired.
- To view the recorded data in graph mode, press **ENTER** ↵.



  - Press **UP** ▲ or **DOWN** ▼ to scroll and view each available recorded PID in graph mode.
  - Press **ENTER** ↵ a second time to view ***2 Graphs***, and a third time to view ***4 Graphs*** in a single screen.
  - To Superimpose PID values (for comparison purposes), press **UP** ▲ or **DOWN** ▼ to scroll to the desired PID and press **ENTER** ↵ to select it – the selected item is highlighted in black. Once all PID selections are completed, press and hold **LD**.
- To exit Live Data Playback mode, press **DOWN** ▼ to scroll and select **Exit Playback** at the bottom of the list, then press **ENTER** ↵.

O2 SENSOR MONITOR – MODE $05

OBD2 regulations require that applicable vehicles Monitor and test operation of the oxygen (O2) sensors to identify problems that can affect fuel efficiency and vehicle emissions. These tests are performed automatically when engine operating conditions are within predefined limits. Results of these tests are stored in the on-board computer's memory.

The O2 Sensor Monitor function lets you retrieve and view O2 Sensor Monitor test results for the most recently completed tests from the vehicle's on-board computer.

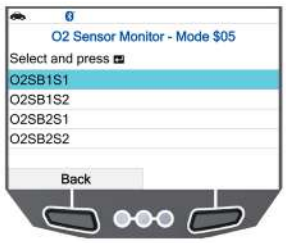
NOTE: *The Scan Tool does not perform O2 sensor tests, but retrieves results from the most recently performed O2 sensor tests from the on-board computer's memory. You may retrieve O2 sensor test results for only one test of one sensor at any given time.*

1. From the **OBD2 Menu**, select **O2 Sensor Monitor – Mode $05**, then press **ENTER** ↵.
2. A "One moment please..." message displays, followed by the Select Sensor screen.

NOTE: *If O2 Sensor Monitor data is not presently stored in the vehicle's computer, an "advisory" message displays. Press **M** to return to the Main Menu.*

NOTE: *If O2 Sensor Monitor are not supported by the vehicle under test, an "advisory" message displays. Press **M** to return to the Main Menu.*

3. Select the O2 sensor for which you wish to view test results, then press **ENTER** ↵ to display the test results.
4. When you have finished viewing the retrieved test data, choose **Next** to view test results for the next sensor, or choose **Back** to return to the Select Sensor screen.
5. When you have finished viewing test data for all desired sensors, choose **Back** from the Select Sensor screen to return to the OBD2 Menu; or press **M** to return to the Main Menu.



OBD MONITOR TEST – MODE $06

The OBD Monitor Test – Mode $06 function retrieves and displays test results for emission-related powertrain components and systems that are not continuously Monitored. The tests available are determined by the vehicle manufacturer.

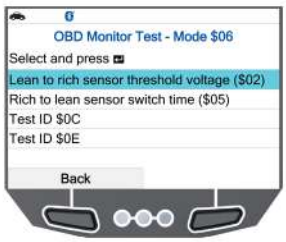
NOTE: *The Scan Tool does not perform the OBD Monitor Test, but retrieves results from the most recently performed tests from the on-board computer's memory. You may retrieve OBD Monitor Test results for only one test at any given time.*

1. From the **OBD2 Menu**, select **OBD Monitor Test – Mode $06**, then press **ENTER** ↵.
2. A "One moment please. . ." message displays, followed by the Select Test screen. (Refer to the vehicle's service repair manual for information related to non-continuous tests.)

NOTE: *If OBD Monitor Test data is not presently stored in the vehicle's computer, an "advisory" message displays. Choose* ***OBD2 Menu*** *to return to the OBD2 Menu.*

NOTE: *If the OBD Monitor Test is not supported by the vehicle under test, an "advisory" message displays. Choose* ***OBD2 Menu*** *to return to the OBD2 Menu.*

3. Select the desired test, then press **ENTER** ↵ to display the test results. The display shows the following information:



   - **Test ID** number
   - **Module ID** number
   - **Component ID** number
   - **Min**, **Max** test limit
   - **Test Value** and **Status**

NOTE: ***Status*** *is calculated by the Scan Tool by comparing the* ***Test Value*** *against the displayed test limit.* ***Status*** *is shown as either* ***Low***, ***High***, *or* ***OK***.

4. When you have finished viewing the retrieved test data, choose **Next** to view results for the next test, or choose **Back** to return to the Select Test screen.
5. When you have finished viewing test data for all desired tests, choose **Back** from the Select Test screen to return to the OBD2 Menu.

REQUEST CONTROL ON-BOARD SYSTEM – MODE $08

The Request Control On-Board System – Mode $08 function lets you perform an EVAP Test or Particulate Filter Regeneration and Inducement System Reinitialization.

- **EVAP Test** – lets you initiate an EVAP test for the vehicle's EVAP system.
- **Particulate Filter Regeneration** – this service requests the vehicle to initiate a particulate filter (PF) regeneration. The vehicle manufacturer is responsible for determining the criteria to enable, start and stop the test, such as engine running, vehicle speed, or engine rpm.
- **Inducement System Reinitialization** – this service requests the vehicle to initiate a reinitialization of the inducement system. The vehicle manufacturer is responsible for determining the criteria to enable, start and stop the test, such as engine running, vehicle speed, or engine rpm.

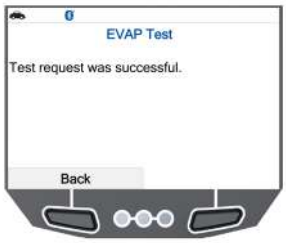
NOTE: *The Scan Tool does not perform the EVAP test, but signals to vehicle's on-board computer to initiate the test. The vehicle manufacturer determines the criteria and method for stopping the test once it has been started. Refer to the vehicle's service repair manual to determine the procedures necessary to stop the test.*

NOTE: *Some vehicle manufacturers do not allow Scan Tools or other external devices to control vehicle systems. If the Request Control On-Board System function is not supported by the vehicle under test, an "advisory" message displays. Press* ***Back*** *to return to the OBD2 Menu.*

1. From the **OBD2 Menu**, select **Request Control On-Board System – Mode $08**, then press **ENTER** ↵.
   - The Request Control On-Board System – Mode $08 screen displays.

NOTE: *The EVAP Test is used for Spark Ignition vehicles, and the Particulate Filter Regeneration and Inducement System Reinitialization is used for Compression Ignition vehicles.*

2. Select the test that displays on screen, then press **ENTER** ↵.
3. A "One moment please…" message displays while the Scan Tool performs the test.
4. When the test has been initiated by the vehicle's on-board computer, a "confirmation" message displays.



DRIVE CYCLE PROCEDURES

A Drive Cycle for a Monitor requires that the vehicle is driven in such a way that all of the required "Enabling Criteria" for the Monitor to run and complete its diagnostic testing are met. You can use the Scan Tool to view the Drive Cycle procedures for a selected Monitor.

1. From the **OBD2 Menu**, select **Drive Cycle Procedures** and press **ENTER** ↵.
   - A "One moment please…" message displays while the Scan Tool retrieves Monitor status.
2. When Monitor status has been retrieved, the Drive Cycle Procedures menu displays. Depending on Monitor status, you can view Drive Cycle procedures for Incomplete (or Enabled) Monitors, Complete Monitors or Disabled Monitors.

NOTE: *If Drive Cycle Procedures are not available for the vehicle, an "advisory" message displays. Select* ***Back****, then press* ***ENTER*** ↵ *to return to the Main Menu.*

3. Select **Incomplete** (or **Enabled**) **Monitors**, **Complete Monitors**, or **Disabled Monitors**, as desired, then press **ENTER** ↵.
   - A list of the available Monitors for the selected status displays.

NOTE: *If no Monitors for the selected status are detected, an "advisory" message displays. Select* ***Back****, then press* ***ENTER*** ↵ *to return to the Main Menu.*

4. Select the Monitor for which you wish to view Drive Cycle Procedures, then press **ENTER** ↵.
   - A "One moment please…" message displays while the Scan Tool retrieves the requested Drive Cycle Procedure.
   - The Drive Cycle Procedures screen for the Monitor displays when the procedure has been retrieved.

NOTE: *If a Drive Cycle Procedure for the selected Monitor is not available, an "advisory" message displays. Select* ***OBD2 Menu*** *to return to the Main Menu.*

5. The Drive Cycle Procedure screen displays the specific set of operating procedures that ensure the vehicle is driven in such a way that all of the required "Enabling Criteria" for the Monitor to run and complete its diagnostic testing are met.
6. When you finish viewing the Drive Cycle Procedures, press **Back** to return to the Drive Cycle Procedures menu.

VEHICLE INFORMATION - MODE $09

The Vehicle Information function offers three options for retrieving reference information for the vehicle under test: **Vehicle ID**, **Available Modules** and **IPT** (In-Use Performance Tracking).

Retrieving Vehicle ID Information

NOTE: *The Vehicle ID function is applicable to model year 2000 and newer OBD2 compliant vehicles.*

The Scan Tool can retrieve a list of information (provided by the vehicle manufacturer), unique to the vehicle under test, from the vehicle's onboard computer. This information may include:

- The vehicle's VIN number.
- The control module identification number.
- The Vehicle's Calibration ID(s). Cal IDs uniquely identify the software version(s) for the vehicle's control module(s).
- The Vehicle's Calibration Verification Number(s) (CVNs) required by ODB2 regulations. CVNs are used to determine if emission-related calibrations for the vehicle under test have been changed. One or more CVNs may be returned by the vehicle's computer.

1. From the **OBD2 Menu**, select **Vehicle Information – Mode $09**, and press **ENTER** ↵.
   - The Vehicle Information menu displays.
2. Select **Vehicle ID**, then press **ENTER** ↵.

NOTE: *The first time the Vehicle ID function is used, it may take several minutes to retrieve the information from the vehicle's computer.*

3. When the retrieval process has completed, the vehicle ID information displays.
4. When you have finished viewing the retrieved vehicle ID information, press **Back** to return to the Vehicle Information menu.

Viewing Available Modules

The Scan Tool can retrieve a list of modules supported by the vehicle under test.

1. From the **OBD2 Menu**, select **Vehicle Information – Mode $09**, and press **ENTER** ↵.

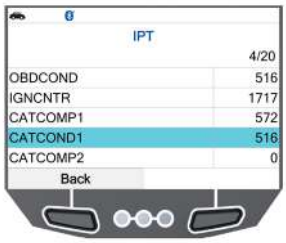
- The Vehicle Information Menu displays.

2. Select **Available Modules**, then press **ENTER** ↵.
3. When the retrieval process has completed, a list of modules supported by the vehicle under test displays.
4. When you have finished viewing the list of available modules, press **Back** to return to the Vehicle Information menu.

Viewing In-use Performance Tracking (IPT)

The Scan Tool can retrieve In-use Performance Tracking (IPT) statistics for Monitors supported by the vehicle under test. Two values are returned for each Monitor; the number of times that all conditions necessary for a specific Monitor to detect a malfunction have been encountered (XXXCOND), and the number of times that the vehicle has been operated under the specific conditions for the Monitor (XXXCOMP). Statistics are also provided for the number of times the vehicle has been operated in OBD Monitoring conditions (OBDCOND), and the number of times the vehicle's engine has been started (IGNCNTR).

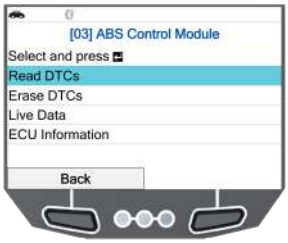
1. From the **OBD2 Menu**, select **Vehicle Information – Mode $09**, and press **ENTER** ↵.
   - The Vehicle Information Menu displays.
2. Select **IPT**, then press **ENTER** ↵.
3. When the retrieval process has completed, the In-use Performance Tracking statistics for the vehicle under test display.
   - If In-use Performance Tracking is not available for the vehicle, an "advisory" message displays. Press **Back** to return to the Vehicle Information menu.
4. When you have finished viewing the statistics, press **Back** to return to the Vehicle Information menu.



ABS/SRS/TPMS DIAGNOSTICS

NOTE: *Refer to the manufacturer's website for vehicle makes covered.*

1. From the System Menu, select **ABS**, **SRS**, or **TPMS** as desired, then press **ENTER** ↵.
   - The Diagnostics Menu displays.
2. The menu displays a list diagnostics functions. These options depend on the selected module.
   - **Read DTCs** - [See page 35]
   - **Erase DTCs** - [See page 36]
   - **Live Data** - [See page 36]
   - **ECU Information** - [See page 37]



READ DTCS

1. From the Diagnostics Menu, select **Read DTCs**, then press **ENTER** ↵.
   - If the Read DTCs function is not supported, an "advisory" message displays. Press **SYSTEM MENU** to return to the System Menu.
   - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" message displays.
     - Ensure the vehicle is OBD2 compliant.
     - Verify the connection at the DLC, and verify the ignition is **ON**.
     - Turn the ignition **OFF**, wait 5 seconds, then turn back **ON** to reset the computer.
     - Press **POWER/LINK** to continue.
   - If the Scan Tool cannot link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.
     - Press **SYSTEM MENU** to return to the System Menu.
     - Turn the ignition off, and disconnect the Scan Tool.
     - Contact Technical Support for assistance.
2. A "One moment please…" message displays while the Scan Tool is scanning.
3. The Scan Tool retrieves and displays DTCs stored in the vehicle's computer for the currently selected module.
4. Refer to **Scan Tool Display Functions** [See page 10] for a description of LCD display elements.

NOTE: *If the definition for the currently displayed code is not available, an "advisory" message displays.*

NOTE: *I/M MONITOR STATUS icons do not display when viewing ABS DTCs.*

NOTE: *In the case of long code definitions, a small arrow is shown in the upper/lower right-hand corner of the code display area to indicate the presence of additional information.*

- If no codes are present, the message "No ABS DTCs are presently stored in the vehicle's computer" displays. Press **SYSTEM MENU** to return to the System Menu.

5. If more than one code was retrieved press **FF/DTC**, or **UP** ▲ or **DOWN** ▼, to display additional codes one at a time.

NOTE: *If the Scan Tool's communication with the vehicle's computer disconnects, press* ***POWER/LINK*** *to re-establish communication.*

6. When the last retrieved DTC has displayed and the **FF/DTC** button is pressed, the Scan Tool returns to the "Priority" code.
   - To exit the enhanced mode, press **SYSTEM MENU** to return to the System Menu. Select **Global OBD2**, then press **ENTER** ↵ to return to the Global OBD2 mode.

ERASE DTCS

1. From the Diagnostics Menu, select **Erase DTCs**, then press **ENTER** ↵.
   - A "confirmation" message displays.
2. If you are sure you want to proceed, press the **Erase DTCs** softkey to continue.
   - If the vehicle's engine is running, an "advisory" message shows.
     - Turn off the engine.
     - Place the transmission in Park or Neutral.
     - Press **Erase DTCs** to continue.
3. A "One moment please…" message displays while the erase function is in progress.
   - If the erase **was** successful, a "confirmation" message displays. After 3 seconds, the Scan Tool automatically re-scans the currently selected module.
   - If the erase **was not** successful, an "advisory" message displays indicating the erase request was sent to the vehicle's computer. After 3 seconds, the Scan Tool automatically re-scans the currently selected module.

LIVE DATA

1. From the Diagnostics Menu, select **Live Data**, then press **ENTER** ↵.
   - A "One moment please…" message displays while the Scan Tool is scanning.
2. The results screen displays all the vehicle's available PIDs with reported values.
   - Refer to OBD2 Live Data [See page 24] for instructions on how to use Live Data mode.

ECU INFORMATION

This function retrieves and displays the specific information for the tested control unit, including Protocol, ECU ID, version number and other specifications.

1. From the Diagnostics Menu, select **ECU Information**, then press **ENTER** ↵.
   - A "One moment please…" message displays while the Scan Tool is scanning.
2. The Scan Tool retrieves and displays the ECU Information screen.

VIEWING OEM ENHANCED DTCS (EXCEPT FORD/MAZDA)

1. From the System Menu, select [**Make**] **OEM Enhanced**, then press **ENTER** ↵.
   - The Diagnostics Menu displays.
2. The menu displays a list diagnostics functions. These options depend on the selected module.

   - **Read DTCs** - [See page 37]
   - **Erase DTCs** - [See page 38]
   - **Live Data** - [See page 39]
   - **Powertrain Active Test** - [See page 39]
   - **Powertrain Special Function** - [See page 39]
   - **ECU Information** - [See page 40]

READ DTCS

1. From the Diagnostics Menu, select **Read DTCs**, then press **ENTER** ↵.
2. A "One moment please" message displays while the Scan Tool retrieves the selected DTCs.
   - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" message displays.
     - Ensure the vehicle is OBD2 compliant.
     - Verify the connection at the DLC, and verify the ignition is **ON**.
     - Turn the ignition **OFF**, wait 5 seconds, then turn back **ON** to reset the computer.
     - Press **POWER/LINK** ⏻◁▷ to continue, or press **SYSTEM MENU** Ⓢ to return to the System Menu.
   - If the Scan Tool cannot link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.
     - Press **SYSTEM MENU** Ⓢ to return to the System Menu.
     - Turn the ignition off, and disconnect the Scan Tool.

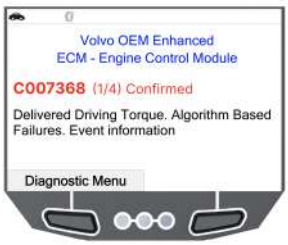
— Contact Technical Support for assistance.

3. Refer to **Scan Tool Display Functions** [See page 10] for a description of LCD display elements.

NOTE: *If the definition for the currently displayed code is not available, an "advisory" message displays.*

NOTE: *I/M MONITOR STATUS icons do not display when viewing enhanced DTCs.*

NOTE: *In the case of long code definitions, a small arrow is shown in the upper/lower right-hand corner of the code display area to indicate the presence of additional information.*



- If no codes are present, the message "No OEM Enhanced DTCs are presently stored in the vehicle's computer" displays. Press **SYSTEM MENU** to return to the System Menu.

4. If more than one code was retrieved press **FF/DTC**, or **UP** or **DOWN**, to display additional codes one at a time.

NOTE: *If the Scan Tool's communication with the vehicle's computer disconnects, press* ***POWER/LINK*** *to re-establish communication.*

5. When the last retrieved DTC has displayed and the **FF/DTC** button is pressed, the Scan Tool returns to the "Priority" Code.
   - To exit the enhanced mode, press **SYSTEM MENU** to return to the System Menu. Select **Global OBD2**, then press **ENTER** to return to the Global OBD2 mode.

ERASE DTCS

1. From the Diagnostics Menu, select **Erase DTCs**, then press **ENTER**.
   - A "confirmation" message displays.
2. If you are sure you want to proceed, press the **Erase DTCs** softkey to continue.
   - If the vehicle's engine is running, an "advisory" message shows.
     — Turn off the engine.
     — Place the transmission in Park or Neutral.
     — Press **Erase DTCs** to continue.
3. A "One moment please…" message displays while the erase function is in progress.
   - If the erase **was** successful, a "confirmation" message displays. After 3 seconds, the Scan Tool automatically re-scans the currently selected module.
   - If the erase **was not** successful, an "advisory" message displays indicating the erase request was sent to the vehicle's computer. After 3 seconds, the Scan Tool automatically re-scans the currently selected module.

LIVE DATA

1. From the Diagnostics Menu, select **Live Data**, then press **ENTER** ↵.
   - A "One moment please…" message displays while the Scan Tool is scanning.
2. The results screen displays all the vehicle's available PIDs with reported values.
   - Refer to OBD2 Live Data [See page 24] for instructions on how to use Live Data mode.

POWERTRAIN ACTIVE TEST

The **Powertrain Active Test** function lets you perform active tests for various vehicle actuators and systems. The specific tests available depend on the vehicle year, make, and model.

1. From the Diagnostics Menu, select **Powertrain Active Test**, then press **ENTER** ↵.
   - A "One moment please..." message displays while the Scan Tool retrieves and displays a menu of Active Tests available for the vehicle being tested.

   NOTE: *If Active Test is not supported for the vehicle under test, the message "Active Test is not supported" displays.*
2. Choose the desired test displayed on the Powertrain Active Test menu.
   - The Scan Tool may display one or more instructional screens to prepare the vehicle for testing.
3. Prepare the vehicle for testing, as necessary.
   - The Scan Tool displays a "control" screen to run the test.
4. Select the appropriate control to operate the actuator as desired.
   - The screen refreshes to show the result.
5. Repeat **step 4** as desired.
6. Press **Back** to return to the Powertrain Active Test menu.

POWERTRAIN SPECIAL FUNCTION

The **Powertrain Special Function** function lets you perform diagnostic, relearn or calibration procedures for various vehicle actuators and systems. The specific tests available depend on the vehicle year, make, and model.

1. From the Diagnostics Menu, select **Powertrain Special Function**, then press **ENTER** ↵.
   - A "One moment please..." message displays while the Scan Tool retrieves and displays a menu of Special Functions available for the vehicle being tested.

   NOTE: *If Special Function is not supported for the vehicle under test, the message "Special Function is not supported" displays.*
2. Choose the desired test displayed on the Powertrain Special Function menu.
   - The Scan Tool may display one or more instructional screens to prepare the vehicle for testing.

3. Make the necessary selections to choose the desired test.
   - A series of instructional screens displays.
4. Follow the on-screens prompts to prepare the vehicle for testing, and to perform the selected test procedures.
   - A "results" screen displays when the test procedure has been completed.
5. Press **Finish** or **Exit** to return to the previous menu.
6. Press **Back** to return to the Special Function menu.

ECU INFORMATION

This function retrieves and displays the specific information for the tested control unit, including Protocol, ECU ID, version number and other specifications.

1. From the Diagnostics Menu, select **ECU Information**, then press **ENTER** ↵.
   - A "One moment please…" message displays while the Scan Tool is scanning.
2. The Scan Tool retrieves and displays the ECU Information screen.

VIEWING OEM ENHANCED DTCS (FORD/MAZDA ONLY)

NOTE: *Mazda Enhanced DTCs are available for Ford/Mazda branded vehicles only.*

When **Ford OEM Enhanced** is chosen from the System Menu, the Ford OEM Enhanced menu displays. You may view DTCs for either the "Continuous Memory DTCs", "KOEO (Key On Engine Off) Test" or "KOER (Key On Engine Running) Test."

1. Select the desired option, then press **ENTER** ↵.
   - If **KOER** is selected, an "advisory" message displays.
     - "NOTE: Engine must be at operating temperature and running to begin the test."
     - Once ready, choose **Continue**. Proceed to **step 4**.
2. If **KOEO** is selected, an instructional message displays.
   - Make sure the ignition is **ON**. Choose **Continue**. Proceed to **step 4**.
3. If **Continuous Memory DTCs** is selected, an instructional message displays.
   - Turn the ignition **OFF**, then turn back **ON**. Choose **Continue**. Proceed to **step 4**.
4. A "One moment please" message displays while the test is in progress.
   - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" message displays.
     - Ensure the vehicle is OBD2 compliant.
     - Verify the connection at the DLC, and verify the ignition is **ON**.
     - Turn the ignition **OFF**, wait 5 seconds, then turn back **ON** to reset the computer.

— Press **POWER/LINK** to continue.

- If the Scan Tool cannot link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.
  - — Press **SYSTEM MENU** to return to the System Menu.
  - — Turn the ignition off, and disconnect the Scan Tool.
  - — Contact Technical Support for assistance.
- If the **KOER** test was selected, and the vehicle's engine is not running, an "advisory" message displays.
  - — Start the engine and press **ENTER** to try again, or, press **SYSTEM MENU** to return to the System Menu.
- If the **KOEO** test was selected, and the vehicle's engine is running, an "advisory" message displays.
  - — Turn the ignition **OFF** then turn back **ON** and press **ENTER** to try again, or, press **SYSTEM MENU** to return to the System Menu.

5. If the **KOER** test was selected, an instructional message displays.

- Turn the steering wheel to the left, then release.
- Press and release the brake pedal.
- Cycle the overdrive switch (if equipped).
- A "One moment please" message displays while the test is in progress.

6. Refer to **Scan Tool Display Functions** [See page 10] for a description of LCD display elements.

NOTE: *If the definition for the currently displayed code is not available, an "advisory" message displays.*

NOTE: *I/M MONITOR STATUS icons do not display when viewing enhanced DTCs.*

NOTE: *In the case of long code definitions, a small arrow is shown in the upper/ lower right-hand corner of the code display area to indicate the presence of additional information.*

- If no codes are present, a "System Pass" message displays. Choose **SYSTEM MENU** to return to the System Menu.

7. If more than one code was retrieved press **FF/DTC**, or **UP** ▲ or **DOWN** ▼ , to display additional codes one at a time.

8. When the last retrieved DTC has displayed and the **FF/DTC** button is pressed, the Scan Tool returns to the "Priority" code.

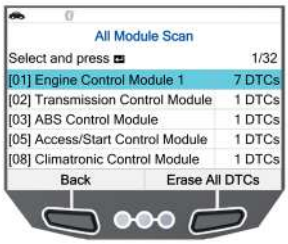
- To view additional enhanced DTCs, repeat **steps 1 through 6**, above.
- To exit the enhanced mode, press **SYSTEM MENU** to return to the System Menu. Select **Global OBD2**, then press **ENTER** to return to the Global OBD2 mode.

NETWORK SCAN

The **Network Scan** lets you perform a scan of all vehicle modules, or of a single selected module, to retrieve DTCs associated with the module(s).

ALL MODULE SCAN

1. Select **All Modules Scan** from the System Menu, then press **ENTER** ↵.
   - A "One moment please..." message displays while the Scan Tool scans all available modules.
   - Press the **Cancel** softkey to exit the scan. The Scan Tool returns to the System Menu screen.
   - Press the **Stop** softkey to pause the scan and view the results retrieved up to this point.
2. When the scan is completed, the All Module Scan screen displays.
3. The results screen lists all tested control modules with their corresponding results:
   - **Fault** – Indicates the number of reported DTCs.
   - **No Fault** – Indicates that no DTCs were found.
   - **Available** – Indicates that the module is part of the system but does not report DTCs.
   - The results screen also allows you to:
     - **Erase All DTCs** - Erases all the modules's retrieved DTCs.



4. Select the desired system, then press **ENTER** ↵.
   - The Diagnostics Menu for each module displays a list of options.
   - Depending on the selected module, you can Read DTCs, Erase DTCs, view Live Data, perform Powertrain Active Test, Powertrain Special Function or read ECU Information.
5. Choose the function you would like to run, or press **Back** to return to the selected module screen.
   - **Read DTCs** - [See page 43]
   - **Erase DTCs** - [See page 44]
   - **Live Data** - [See page 44]
   - **Powertrain Active Test** - [See page 45]
   - **Powertrain Special Function** - [See page 45]
   - **ECU Information** - [See page 46]

MODULE SELECTION

1. Choose **Module Selection** from the System Menu, then press **ENTER** ↵.
   - If the Select Group screen displays, select the group (**Powertrain**, **Chassis**, **Body**, etc.) containing the module you wish to scan, then press **ENTER** ↵. Proceed to **step 2**.

- If the Select Group screen does not display, proceed to **step 2**.

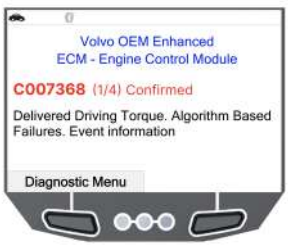
2. The Available Systems screen displays. Select the desired module, then press **ENTER** ↵.
   - The Diagnostics Menu for each module displays a list of options.
   - Depending on the selected module, you can Read DTCs, Erase DTCs, view Live Data, perform Powertrain Active Test, Powertrain Special Function or read ECU Information.
3. Choose the function you would like to run, or press **Back** to return to the previous screen.
   - **Read DTCs** - [See page 43]
   - **Erase DTCs** - [See page 44]
   - **Live Data** - [See page 44]
   - **Powertrain Active Test** - [See page 45]
   - **Powertrain Special Function** - [See page 45]
   - **ECU Information** - [See page 46]

Read DTCs

1. From the Diagnostics Menu, select **Read DTCs**, then press **ENTER** ↵.
2. A "One moment please" message displays while the Scan Tool retrieves the selected DTCs.
   - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" message displays.
     - Ensure the vehicle is OBD2 compliant.
     - Verify the connection at the DLC, and verify the ignition is **ON**.
     - Turn the ignition **OFF**, wait 5 seconds, then turn back **ON** to reset the computer.
     - Press **POWER/LINK** to continue, or press **SYSTEM MENU** Ⓢ to return to the System Menu.
   - If the Scan Tool cannot link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.
     - Press **SYSTEM MENU** Ⓢ to return to the System Menu.
     - Turn the ignition off, and disconnect the Scan Tool.
     - Contact Technical Support for assistance.
3. Refer to **Scan Tool Display Functions** [See page 10] for a description of LCD display elements.

NOTE: *If the definition for the currently displayed code is not available, an "advisory" message displays.*

NOTE: *I/M MONITOR STATUS icons do not display when viewing enhanced DTCs.*



NOTE: *In the case of long code definitions, a small arrow is shown in the upper/lower right-hand corner of the code display area to indicate the presence of additional information.*

- If no codes are present, the message "No OEM Enhanced DTCs are presently stored in the vehicle's computer" displays. Press **SYSTEM MENU** to return to the System Menu.

4. If more than one code was retrieved press **FF/DTC**, or **UP** ▲ or **DOWN** ▼, to display additional codes one at a time.

NOTE: *If the Scan Tool's communication with the vehicle's computer disconnects, press* ***POWER/LINK*** *to re-establish communication.*

5. When the last retrieved DTC has displayed and the **FF/DTC** button is pressed, the Scan Tool returns to the "Priority" Code.
   - To exit the enhanced mode, press **SYSTEM MENU** to return to the System Menu. Select **Global OBD2**, then press **ENTER** ↵ to return to the Global OBD2 mode.

Erase DTCs

1. From the Diagnostics Menu, select **Erase DTCs**, then press **ENTER** ↵.
   - A "confirmation" message displays.
2. If you are sure you want to proceed, press the **Erase DTCs** softkey to continue.
   - If the vehicle's engine is running, an "advisory" message displays.
     - Turn off the engine.
     - Place the transmission in Park or Neutral.
     - Press **Erase DTCs** to continue.
3. A "One moment please…" message displays while the erase function is in progress.
   - If the erase **was** successful, a "confirmation" message displays. After 3 seconds, the Scan Tool automatically re-scans the currently selected module.
   - If the erase **was not** successful, an "advisory" message displays indicating the erase request was sent to the vehicle's computer. After 3 seconds, the Scan Tool automatically re-scans the currently selected module.

Live Data

1. From the Diagnostics Menu, select **Live Data**, then press **ENTER** ↵.
   - A "One moment please…" message displays while the Scan Tool is scanning.
2. The results screen displays all the vehicle's available PIDs with reported values.
   - Refer to OBD2 Live Data [See page 24] for instructions on how to use Live Data mode.

Powertrain Active Test

The **Powertrain Active Test** function lets you perform active tests for various vehicle actuators and systems. The specific tests available depend on the vehicle year, make, and model.

1. From the Diagnostics Menu, select **Powertrain Active Test**, then press **ENTER** ↵.
   - A "One moment please..." message displays while the Scan Tool retrieves and displays a menu of Active Tests available for the vehicle being tested.

NOTE: *If Active Test is not supported for the vehicle under test, the message "Active Test is not supported" displays.*

2. Choose the desired test displayed on the Powertrain Active Test menu.
   - The Scan Tool may display one or more instructional screens to prepare the vehicle for testing.
3. Prepare the vehicle for testing, as necessary.
   - The Scan Tool displays a "control" screen to run the test.
4. Select the appropriate control to operate the actuator as desired.
   - The screen refreshes to show the result.
5. Repeat **step 4** as desired.
6. Press **Back** to return to the Powertrain Active Test menu.

Powertrain Special Function

The **Powertrain Special Function** function lets you perform diagnostic, relearn or calibration procedures for various vehicle actuators and systems. The specific tests available depend on the vehicle year, make, and model.

1. From the Diagnostics Menu, select **Powertrain Special Function**, then press **ENTER** ↵.
   - A "One moment please..." message displays while the Scan Tool retrieves and displays a menu of Special Functions available for the vehicle being tested.

NOTE: *If Special Function is not supported for the vehicle under test, the message "Special Function is not supported" displays.*

2. Choose the desired test displayed on the Powertrain Special Function menu.
   - The Scan Tool may display one or more instructional screens to prepare the vehicle for testing.
3. Make the necessary selections to choose the desired test.
   - A series of instructional screens displays.
4. Follow the on-screens prompts to prepare the vehicle for testing, and to perform the selected test procedures.
   - A "results" screen displays when the test procedure has been completed.
5. Press **Finish** or **Exit** to return to the previous menu.
6. Press **Back** to return to the Special Function menu.

ECU Information

This function retrieves and displays the specific information for the tested control unit, including Protocol, ECU ID, version number and other specifications.

1. From the Diagnostics Menu, select **ECU Information**, then press **ENTER** ↵.
   - A "One moment please…" message displays while the Scan Tool is scanning.
2. The Scan Tool retrieves and displays the ECU Information screen.

MAIN MENU

SERVICE RESET

The Service Reset function offers up to 33 options for performing service reset, including: **Oil Maintenance Reset**, **Battery Reset**, **Battery Initialization, Steering Angle Sensor Calibration**, **EPB Reset**, **ABS Bleeding** and **Diesel Particulate Filter Reset**. Procedures may vary depending on the vehicle being serviced.

OIL MAINTENANCE RESET

1. While linked to the vehicle, press **M**.
   - The Main Menu displays.
2. Choose **Service Reset**, then press **ENTER** ↵.
   - The Service Reset functions display.
3. Select **Oil Maintenance Reset**, then press **ENTER** ↵.
   - The Oil Maintenance Reset screen displays. Select **Yes** to continue, or **No** to cancel.

   NOTE: *If the Scan Tool cannot reset the Oil Maintenance Light, an instructional dialog displays, showing the manual procedures for resetting the indicator light.*
4. When the reset process has completed, a "confirmation" message displays. Select **Exit** to return to the Main Menu.
5. If the Oil Maintenance Reset was not successful, an "advisory" message displays.
   - To perform the oil reset by procedure, select **Yes**, then press **ENTER** ↵. Procced to **step 6**.
   - If you do not wish to perform the oil reset by procedure, select **No**, then press **ENTER** ↵ to return to the Main Menu.
6. An instructional message displays, showing the manual procedures for resetting the indicator light.
7. When finished viewing the instructions, press **M** to return to the Main Menu.

BATTERY RESET

You can use the Scan Tool to view the procedures for resetting the battery Monitor system following battery replacement or perform battery reset OBD service.

1. While linked to a vehicle, press **M**.
   - The Main Menu displays.
2. Choose **Service Reset**, then press **ENTER** ↵.
   - The Service Reset functions display.
3. Select **Battery Reset**, then press **ENTER** ↵.

- The Battery Reset Procedures screen displays.

4. Press the **Continue** button.
   - The menu provides access to **General Information**, **Battery Disconnection Precautions**, **Battery Connection Precautions**, and **Battery Connection Procedures**.

   NOTE: *If battery reset procedures are not available, an "advisory" message displays. Choose* ***Back*** *to return to the Battery Reset Menu.*

5. Choose the procedure you wish to view, then press **ENTER** ↵.
   - The selected procedure displays.
6. When you have finished viewing the retrieved information, choose **Back** to return to the Battery Reset Procedures menu. Repeat **step 4** to view additional procedures.
   - When you have finished viewing all desired procedures, choose **Main Menu** to return to the Main Menu.

BATTERY INITIALIZATION

The following paragraphs provide procedures for performing battery reset OBD service on BMW, Ford, Volvo, and Audi/Volkswagen models.

To Perform Battery Reset OBD Service (BMW/Ford/Volvo):

1. While linked to a vehicle, press **M**.
   - The Main Menu displays.
2. Select **Service Reset**, then press **ENTER** ↵.
   - The Service Reset menu displays.
3. Select **Battery Initialization**, then press **ENTER** ↵.
   - The Battery Reset menu displays.
4. Select **Battery Reset OBD Service**, then press **ENTER** ↵.
   - An instructional message displays.
5. Follow the instructions provided to prepare the vehicle for battery reset OBD service. When all necessary procedures have been performed, choose **Next** to continue.
   - A "Live Data" screen displays, if applicable.
6. Choose **Next** to continue.
   - A "One moment please…" message displays while battery reset is in process.
7. If the battery reset process is successful, a "Reset Complete" message displays.
   - Choose **Exit** to return to the Main Menu.
   - If the battery reset process is *not* successful, a "Reset Fail" message displays. Choose **Back** to return to the Battery Reset Menu.

To Perform Battery Reset OBD Service (Audi/Volkswagen):

1. While linked to a vehicle, press **M**.
   - The Main Menu displays.
2. Select **Service Reset**, then press **ENTER** ↵.
   - The Service Reset menu displays.
3. Select **Battery Initialization**, then press **ENTER** ↵.
   - The Battery Reset menu displays.
4. Select **Battery Reset OBD Service**, then press **ENTER** ↵.
   - An "informational" screen displays.
5. Choose **Next** to continue.
   - A series of instructional screens display, directing you to enter reference information for the battery (*part number, manufacturer, serial number*).
6. Choose **Next**, as necessary, to scroll the screen and enter the necessary information.
   - A "confirmation" screen displays.
   - The screen displays the previously entered Battery part number, Battery manufacturer and Battery serial number.
7. Select the desired option:
   - To proceed with coding, select **Carry out coding** and press **ENTER** ↵. Proceed to **step 8**.
   - To re-enter battery reference information, select **Repeat input** and press **ENTER** ↵. Repeat **steps 4 and 5**.
   - To cancel the battery reset process, select **Cancel** and press **ENTER** ↵ to return to the Battery Reset Menu.
8. If battery coding was successful, a "confirmation" screen displays. Choose **Back** to return to the Battery Reset Menu.
   - If battery coding was *not* successful, an "advisory" screen displays. Choose **Exit** to return to the Main Menu.

STEERING ANGLE SENSOR (SAS) CALIBRATION

The Steering Angle Sensor Calibration function is available for **BMW**, **Chrysler**, **Ford**, **GM**, **Hyundai**, **Nissan**, **Toyota**, **Volkswagen**, **Volvo** vehicles, and more. Calibration procedures vary between vehicle makes and models.

NOTE: *If an error occurs while performing calibration procedures, an "advisory" message displays. Select* ***Exit*** *to return to the Service Reset menu.*

1. While linked to the vehicle, press **M**.
   - The Main Menu displays.
2. Select **Service Reset**, then press **ENTER** ↵.

- The Service Reset menu displays.

3. Select **Steering Angle Sensor Calibration** in the Service Reset menu, then press **ENTER** ↵.
   - For some vehicles, a submenu displays. Select the desired option, then press **ENTER** ↵. Proceed to **step 4**.

NOTE: *If SAS calibration is not supported by the vehicle under test, an "advisory" message displays. Select* ***Back*** *to return to the Service Reset menu.*

4. A "One moment" message displays, followed by one or more "informational/instructional" screens.
   - Perform test procedures as directed. Select **Next**, as appropriate, to scroll to the next screen.
5. For some vehicles, "status" screens display as each phase of the calibration procedure is successfully completed. Select **Next**, as appropriate, to scroll to the next screen.
   - A "results" screen displays when the calibration procedure has been completed.
6. Select **Back** to return to the Service Reset menu.

ELECTRONIC PARKING BRAKE (EPB) RESET

EPB Reset procedures vary between vehicle makes and models.

NOTE: *If an error occurs while performing calibration procedures, an "advisory" message displays. Select* ***Exit*** *to return to the Service Reset menu.*

1. While linked to the vehicle, press **M**.
   - The Main Menu displays.
2. Select **Service Reset**, then press **ENTER** ↵.
   - The Service Reset menu displays.
3. Select **EPB Reset** in the Service Reset menu, then press **ENTER** ↵.
   - A "One moment" message displays.
   - For some vehicles, one or more submenus displays. Select the desired module and/or option, as appropriate, then press **ENTER** ↵. Proceed to **step 4**.

NOTE: *If EPB reset is not supported by the vehicle under test, an "advisory" message displays. Select* ***Back*** *to return to the Service Reset menu.*

4. One or more "informational/instructional" screens display.
   - Perform test procedures as directed. Select **Next**, as appropriate, to scroll to the next screen.
5. For some vehicles, "status" screens display as each phase of the calibration procedure is successfully completed. Select **Next**, as appropriate, to scroll to the next screen.
   - A "One moment" message displays while the procedure is in process.
   - A "results" screen displays when the calibration procedure has been completed.

NOTE: *If the procedure is stopped due to a communication error, an "advisory" message displays. Select* ***Back*** *to return to the Service Reset menu.*

6. Select **Back** to return to the Service Reset menu.

DPF (DIESEL PARTICULATE FILTER) RESET

NOTE: *If the vehicle under test is not a diesel vehicle, an "advisory" message displays. Choose* ***Back*** *to return to the Service Reset menu.*

1. Select **DPF Reset** in the Service Reset menu, then press **ENTER** ↵.
   - A "One moment please..." message displays, followed by the DPF Reset Menu.
2. Select **DPF Regeneration Procedure**, then press **ENTER** ↵.
   - The DPF Regeneration Procedure screen displays.

NOTE: *If the vehicle under test does not support DPF Regeneration Procedure, an "informational" screen displays the procedures for "passive" DPF regeneration. Choose* ***Back*** *to return to the DPF Reset Menu.*

3. Choose **Next** to continue.
   - An "informational" screen displays the procedures for "passive" or "active" DPF regeneration, as applicable. Choose **Back** to return to the DPF Reset Menu.
4. Select **DPF OBD Service**, then press **ENTER** ↵.
   - A "One moment please..." message displays, followed by the DPF Reset menu. Select the desired option.
   - An instructional screen displays. Prepare the vehicle for test as directed.
5. Choose **Next** to continue.
   - A series of "status" screens display while the routine is in process.
   - A "confirmation" screen displays when the routine is completed.
6. Choose **Back** to return to the DPF Reset Menu, then choose **Back** to return to the Service Reset menu.

ABS BLEEDING

The ABS Bleeding function and procedures vary between vehicle makes and models.

NOTE: *If an error occurs while performing ABS bleeding procedures, an "advisory" message displays. Choose* ***Exit*** *or* ***Back****, as necessary, to return to the Service Reset menu.*

1. While linked to the vehicle, press **M**.
   - The Main Menu displays.
2. Select **Service Reset**, then press **ENTER** ↵.

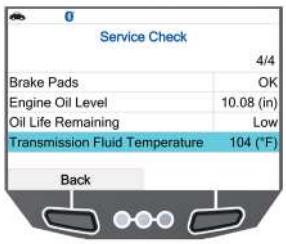
- The Service Reset menu displays.

3. Select **ABS Bleeding** in the Service Reset menu, then press **ENTER** ↵.
   - A "One moment" message may display.
   - A submenu displays. Select the desired option, then press **ENTER** ↵. Proceed to **step 4**.
4. One or more "informational/instructional" screens display.
   - Perform test procedures as directed. Select **Next** or **Continue**, as appropriate, to scroll to the next screen.
5. For some vehicles, "status" screens display as each phase of the calibration procedure is successfully completed. Select **Next** or **Continue**, as appropriate, to scroll to the next screen.
   - A "results" screen displays when the procedure has been completed.

   NOTE: *If the procedure is stopped due to a communication error, an "advisory" message displays. Select* ***Exit*** *or* ***Back****, as necessary, to return to the Service Reset menu.*
6. Choose **Exit** or **Back**, as necessary, to return to the Service Reset menu.

SERVICE CHECK

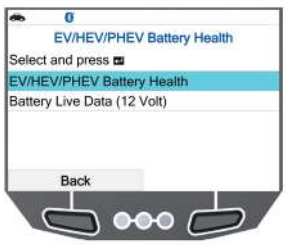
The Service Check function lets you check the current oil level, oil life remaining, brake pads life, and transmission fluid temperature.



1. While linked to the vehicle, press **M**.
   - The Main Menu displays.
2. Select **Service Check**, then press **ENTER** ↵.
   - The Service Check screen displays.
   - The screen displays the current **Engine Oil Level**, **Oil Life Remaining**, **Brake Pads**, and **Transmission Fluid Temperature**.
3. When you have finished viewing the information, press **Back** to return.

EV/HEV/PHEV BATTERY HEALTH, BATTERY/ALTERNATOR TEST

The Scan Tool can perform a check of the vehicle's battery and alternator system (or hybrid/EV battery system) to ensure the system is operating within acceptable limits.

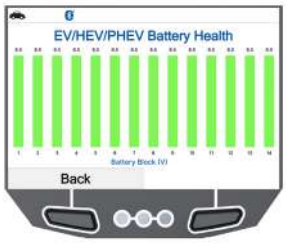


1. While linked to the vehicle, press **M**.
   - The Main Menu displays.
2. Select **EV/HEV/PHEV Battery Health**, **Battery/Alternator Test**, then press **ENTER** ↵.

- If the vehicle is an electric or hybrid vehicle, the EV/HEV/PHEV Battery Health menu displays.

NOTE: *If the Hybrid/EV Battery Test is not supported by the vehicle under test, an "advisory" message displays. Press* ***M*** *to return to the Main Menu.*

- If the vehicle is not an electric or hybrid vehicle, the **Battery/Alternator Test** menu displays. [See page 53]



3. Select **EV/HEV/PHEV Battery Health**, then press **ENTER** ↵.
   - A graphic display of the current state of charge for all cells in the battery pack displays.
4. Select **Battery Live Data (12 Volts)**, then press **ENTER** ↵.
   - A "Battery Live Data" screen displays.
5. When you have finished viewing the retrieved information, press **Back** to return.

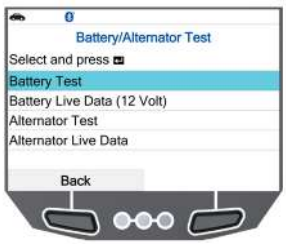
BATTERY/ALTERNATOR TEST

The Scan Tool can perform a check of the vehicle's battery and alternator system to ensure the system is operating within acceptable limits. You can perform a battery check only, or an alternator system (battery and alternator) check.

PERFORM THE BATTERY TEST

When EV/HEV/PHEV Battery Health, Battery/Alternator Test is selected from the Main Menu and the vehicle is not an electric or hybrid vehicle, the Battery/Alternator Test menu displays. Proceed to **step 3**.

1. While linked to the vehicle, press **M**.
   - The Main Menu displays.
2. Select **Battery/Alternator Test**, then press **ENTER** ↵.
   - The Battery/Alternator Test menu displays.
3. Select **Battery Test**, then press **ENTER** ↵.
   - An instructional message displays, showing the procedures to prepare the vehicle for the battery check.



4. Prepare the vehicle for the battery check:
   - Turn the engine off.
   - Place the transmission in PARK or NEUTRAL, and set the parking brake.
   - Make a visual check of the battery's condition. If the battery terminals are corroded or other damage is present, clean or replace the battery as appropriate.
   - For "unsealed" batteries, make sure the water level in each cell is above the battery plates.
   - Turn the ignition on. **DO NOT** start the engine.

5. Choose **Continue** to proceed..

   ***NOTE:** If the engine is running, an "advisory" message displays. Turn the engine off, then turn the ignition on. **DO NOT** start the engine. Press **ENTER** ↵ to continue.*

   - An instructional message displays.

6. Turn the vehicle's headlights on, then choose **Continue** to proceed.
   - A "countdown" message displays while the battery check is in process.
7. Turn the vehicle's headlights off, then choose **Continue** to proceed.
   - An instructional message displays.
     - If battery voltage is **less than 11.8 volts**, an "advisory" message displays. Press **Main Menu** to return to the Main Menu. Turn the ignition off and disconnect the Scan Tool from the vehicle. Fully charge the battery, then repeat the battery check.
     - If battery voltage is **between 11.8 and 12.1 volts**, a "warning" message displays: "Battery voltage is low, this may affect the accuracy of the test results."
     - If battery voltage is **greater than 12.1 volts**, an instructional message displays. Start the vehicle's engine.

   ***NOTE:** If the Scan Tool did not detect the start of the vehicle's engine, an "advisory" message displays. Press **Retest** to repeat the battery check, or, press **Exit** to return to the Main Menu.*

8. When the battery check is complete, a results screen displays with the battery's status.
9. Press **M** to return to the Main Menu.

VIEWING BATTERY LIVE DATA (12 VOLTS)

1. From the Main Menu, select **EV/HEV/PHEV Battery Health**, **Battery/Alternator Test**, then press **ENTER** ↵.
   - The EV/HEV/PHEV battery Health or Battery/Alternator Test menu displays.
2. Select **Battery Live Data (12 Volts)**, then press **ENTER** ↵.
   - The Battery Live Data (12 Volts) menu displays.
3. When you finish viewing the Battery Live Data (12 Volts), press **Back** to return to the previous screen.

PERFORM THE ALTERNATOR TEST

When EV/HEV/PHEV Battery Health, Battery/Alternator Test is selected from the Main Menu and the vehicle is not an electric or hybrid vehicle, the Battery/Alternator Test menu displays. Proceed to **step 3**.

1. While linked to the vehicle, press **M**.
   - The Main Menu displays.
2. Select **Battery/Alternator Test**, then press **ENTER** ↵.
   - The Battery/Alternator Test Menu displays.

3. Select **Alternator Test**, then press **ENTER** ↵.
   - An instructional message displays.
4. Start and warm the engine to normal operating temperature. Turn on the headlights. Press **ENTER** ↵ to continue.
   - An instructional message displays.
5. Press the accelerator pedal to raise engine speed to 2000 RPM, and maintain the engine speed.
   - When engine speed is within the required range, the alternator test begins. A progress screen displays.
   - When the "countdown" timer expires, an instructional message displays.
6. Turn the vehicle's headlights off, and return the engine to idle speed.
   - A "One moment please…" message displays while the test results are retrieved.
7. When the alternator check is complete, a results screen displays the charging system voltage and indicates whether or not the charging system is within acceptable limits. Press **M** to return to the Main Menu.

VIEWING ALTERNATOR LIVE DATA

1. From the Main Menu, select **EV/HEV/PHEV Battery Health**, **Battery/Alternator Test**, then press **ENTER** ↵.
   - The EV/HEV/PHEV Battery Health or Battery/Alternator Test menu displays.
2. Select **Alternator Live Data**, then press **ENTER** ↵.
   - The Alternator Live Data menu displays.

NOTE: *If Alternator Live Data is not supported by the vehicle under test, an "advisory" message displays. Press* ***M*** *to return to the Main Menu.*

3. When you finish viewing the Alternator Live Data, select **Back** to return to the previous screen.

USING THE DLC LOCATOR

1. Select **DLC Locator** in the Main Menu, then press **ENTER** ↵.
   - The Select Vehicle Model Year screen displays.
2. Select the desired **vehicle model year**, then press **ENTER** ↵.
   - The Select Vehicle Manufacturer screen displays.
3. Select the desired **vehicle manufacturer**, then press **ENTER** ↵.
   - The Select Vehicle Model screen displays.
4. Select the desired **model**, then press **ENTER** ↵.
   - The DLC Location screen for the selected vehicle displays.
   - The DLC Location screen displays the selected vehicle make and model, a description of the DLC location and whether the DLC is "covered" or "uncovered," and includes a picture of the DLC location.

5. When you have finished viewing the DLC location, choose **New Vehicle** (to view the DLC location for another vehicle) or choose **Exit** to return to the Main Menu.

VIEWING THE FIRMWARE VERSION

1. Select **Firmware Version** in the Main Menu, then press **ENTER** ↵.
   - The Firmware Version screen displays.
   - The screen displays the Scan Tool's current firmware version, bootloader version, database version, and tool ID.
2. Press **M** to return to the Main Menu.

TOOL LIBRARY

Tool Library contains valuable reference information for the Scan Tool. The following functions are available:

- **Icon Definition** – Displays the full names and descriptions for the I/M MONITOR STATUS icons shown on the Scan Tool's display.
- **DTC Library** – Provides the definitions of OBD1 and OBD2 DTCs.
- **Hotkey Legends** – Shows functional descriptions for the Scan Tool's hotkeys.
- **Smog Check or I/M Program LED Definition** – Provides descriptions of the Scan Tool's LED.
- **QR RS2 App** – Provides QR code for downloading the RepairSolutions2 (RS2) app.
- **Monitor Icon Status** – Defines the Monitor icon status's color and provides tips on how to proceed.

1. While linked to the vehicle, press **M**.
   - The Main Menu displays.
2. Select **Tool Library**, then press **ENTER** ↵.
   - The Tool Library menu displays.

ICON DEFINITION

The I/M MONITOR STATUS icons on the Scan Tool's LCD display provide an indication of the "Completed / Not Completed" status for all I/M Monitors supported by the vehicle under test. The Icon Definition screen displays the full name for each Monitor icon, as well as descriptions of the meanings of other informational icons shown on the Scan Tool's display.

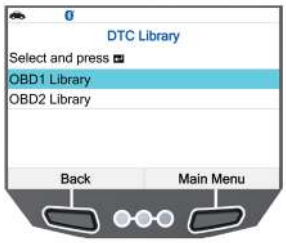
1. From the Tool Library menu, select **Icon Definition**, then press **ENTER** ↵.

- The Icon Definition menu displays.

2. Press **UP** ▲ or **DOWN** ▼, as necessary, to select the type of icons you wish to view, **Spark Ignition Monitors**, **Compression Ignition Monitors** or **Tool Icons**, the press **ENTER** ↵.
   - The screen displays a list of Monitors for the selected category.
   - Press **Back** to return to the Icon Definition menu. If desired, repeat **step 2** to view additional Icon Definitions.
3. When you have finished viewing the descriptions, press **M** to return to the Main Menu.

DTC LIBRARY

1. From the Tool Library menu, select **DTC Library**, then press **ENTER** ↵.
   - The Select Library screen displays.
2. Select **OBD1 Library**, or **OBD2 Library**, as desired, then press **ENTER** ↵.
   - The Select Manufacturer screen displays.
3. Select the desired **vehicle manufacturer**, then press **ENTER** ↵.
   - The Enter DTC screen displays.

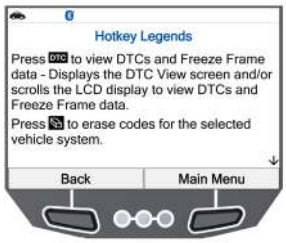


4. Enter the DTC information.
   - **For OBD1 DTCs**: The screen shows the code "000," with the first character highlighted. Press **UP** ▲ or **DOWN** ▼, as necessary, to scroll to the first digit of the DTC, then press **ENTER** ↵.
   - **For OBD2 DTCs**: The screen displays the code "P0001," with the "P" highlighted. Press **UP** ▲ or **DOWN** ▼, as necessary, to scroll to the desired DTC type (**P**=Powertrain, **U**=Network, **B**=Body, **C**=Chassis), then press **ENTER** ↵.
   - The selected character displays solid, and the next character is highlighted.
5. Select the remaining digits in the DTC in the same way. When you have selected all of the DTC digits, press **ENTER** ↵ to view the DTC definition.
6. When you have finished viewing the DTC definition, press **M** to return to the Main Menu.

NOTE: *If a definition for the DTC you entered is not available, an "advisory" message displays. Press* ***Back*** *to return to the Enter DTC screen and enter additional DTCs; or press* ***M*** *to return to the Main Menu.*

HOTKEY LEGENDS

1. From the Tool Library menu, select **Hotkey Legends**, then press **ENTER** ↵.
   - The Hotkey Legends screen displays.
   - The screen displays a functional description of each of the Scan Tool's hotkeys.
2. When you have finished viewing the Hotkey Legends, press **Back** to return to the Tool Library menu, or press **M** to return to the Main Menu.



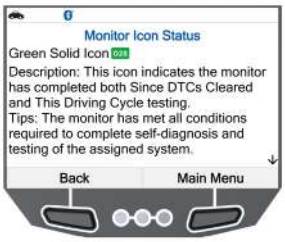
SMOG CHECK OR I/M PROGRAM LED DEFINITION

1. From the Tool Library menu, select **Smog Check or I/M Program LED Definition**, then press **ENTER** ↵.
   - The Smog Check or I/M Program LED Definition screen displays.
2. When you have finished viewing the Smog Check or I/M Program LED Definition, press **M** to return to the Main Menu.

THE RS2 APP QR CODE

1. From the Tool Library menu, select **QR RS2 App**, then press **ENTER** ↵.
   - The QR RS2 App screen displays.
2. Press **UP** ▲ or **DOWN** ▼ to navigate through the options.
   - Scan the QR Code with a mobile device to download the RS2 app.
   - When you have finished viewing the QR RS2 App, press **Back** to return to the Tool Library menu, or press **M** to return to the Main Menu.

MONITOR ICON STATUS



1. From the Tool Library menu, select **Monitor Icon Status**, then press **ENTER** ↵.
   - The Monitor Icon Status screen displays.
2. When you have finished viewing the Monitor Icon Status, press **M** to return to the Main Menu.

TOOL SETTINGS

The Tool Settings let you make adjustments and settings to configure the tool to your particular needs. The following options are included:

- **Adjust Brightness:** Adjusts the brightness of the display screen.
- **Audible Tone:** Toggles the sound of the Scan Tool. If switched on, a tone sounds each time any button is pressed.
- **Live Data Description:** Switches the display names of PIDs in Live Data – Mode $01 between short names and full names.
- **Language Selection:** Sets the display language for the Scan Tool.
- **Unit of Measurement:** Sets the unit of displayed data on the Scan Tool.
- **Smog Check or I/M Program Location:** Sets the Scan Tool's emission inspection standards based on the selected U.S. state.
- **QR RS2 App Settings:** Toggles the display of QR RS2 App when linking to the OBD2 Scan Tool.

1. While linked to the vehicle, press the **M** button.
    - The Main Menu displays.
2. Select **Tool Settings**, then press **ENTER** ↵.
    - The Tool Setting menu displays.

ADJUST BRIGHTNESS

1. Select **Adjust Brightness** in the Tool Settings menu, then press **ENTER** ↵.
    - The Adjust Brightness screen displays.
2. Press **UP** ▲ and **DOWN** ▼ to make the display lighter or darker, then press the **Save** softkey to save your changes.

NOTE: *To return to the Tool Settings menu without making changes, choose* ***Back****.*

AUDIBLE TONE

1. Select **Audible Tone** in the Tool Settings menu, then press **ENTER** ↵.
    - The Audible Tone screen displays.
2. Select **ON** or **OFF** as desired, then press the **Save** softkey to save your changes.

NOTE: *To return to the Tool Settings menu without making changes, choose* ***Back****.*

ENABLING/DISABLING LIVE DATA DESCRIPTION

1. Select **Live Data Description** in the Tool Settings menu, then press **ENTER** ↵.
    - The Live Data Description screen displays.
2. Select **ON** or **OFF** as desired, then choose **Save** to save your changes.

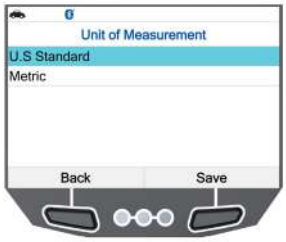
NOTE: *To return to the Tool Settings menu without making changes, choose* ***Back****.*

LANGUAGE SELECTION

1. Select **Language Selection** in the Tool Settings menu, then press **ENTER** ↵.
    - The Language Selection screen displays.
2. Select the desired display language (**English**, **Español**, **Français**) then press the **Save** softkey to save your changes.

NOTE: *To return to the Tool Settings menu without making changes, choose* ***Back****.*

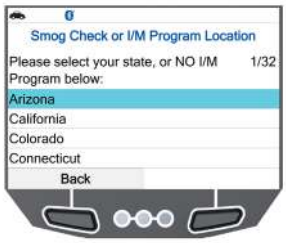
UNIT OF MEASUREMENT



1. Select **Unit of Measurement** in the Tool Settings menu, then press **ENTER** ↵.
   - The Unit of Measurement screen displays.
2. Select the desired unit of measurement (**U.S Standard** or **Metric**), then press the **Save** softkey to save your changes.

NOTE: *To return to the Tool Settings menu without making changes, choose* ***Back****.*

SMOG CHECK OR I/M PROGRAM LOCATION



1. Select **Smog Check or I/M Program Location** in the Tool Settings menu, then press **ENTER** ↵.
   - The Smog Check or I/M Program Location screen displays.
2. Select the desired **U.S State**, then press **ENTER** ↵ to save your changes.

NOTE: *To return to the Tool Settings menu without making changes, choose* ***Back****.*

QR RS2 APP SETTING

1. Select **QR RS2 App Settings** in the Tool Settings menu, then press **ENTER** ↵.
   - The QR RS2 App Settings screen displays.
2. Select **Enable** or **Disable** as desired, then the **Save** softkey to save your changes.

NOTE: *To return to the Tool Settings menu without making changes, choose* ***Back****.*

VIEWING DATA STORED IN MEMORY

When you retrieve DTCs from a vehicle, the data is saved to the Scan Tool's memory. Each time you retrieve DTCs, existing data in the Scan Tool's memory is overwritten with the new data.

When you turn the Scan Tool **ON** while **NOT** connected to a vehicle, and data is currently saved in the Scan Tool's memory, the Scan Tool enters Memory mode. View DTCs and Live Data stored in the Scan Tool's memory as follows:

1. With the Scan Tool **NOT** connected to a vehicle, press **POWER/LINK** ⏻◁▷ to turn the Scan Tool on.
   - If the Scan Tool's batteries are low, a warning message displays. Replace the batteries before continuing.
2. If more than one vehicle is stored in the Scan Tool's memory, the Vehicle Selection menu displays. Select the desired vehicle, then press **ENTER** ↵.

NOTE: *If there are no vehicles currently stored in the Scan Tool, an "advisory" message displays. Press* ***M*** *to return to the Main Menu.*

3. Select the **DTCs** you wish to view, then press **ENTER** ↵.
   - The Scan Tool displays the "priority" DTC. If there are no DTCs currently stored in the Scan Tool's memory, an "advisory" message displays.
   - Press **FF/DTC** to scroll through all stored DTCs, and to view Freeze Frame data for the priority DTC.
   - When all DTCs have displayed and the **FF/DTC** button is pressed, the Scan Tool displays the first enhanced DTC stored in memory. Press **FF/DTC**, or the **UP** ▲ and **DOWN** ▼, to scroll through all stored enhanced DTCs.
4. When you have finished viewing data in the Scan Tool's memory, press **POWER/LINK** ⏻ to turn the Scan Tool **OFF**.

TOOL FIRMWARE UPDATES

The following provides detailed instructions on how to download the **INNOVA® OBD Tool Updater** application and update your INNOVA OBD2 Scan Tool.

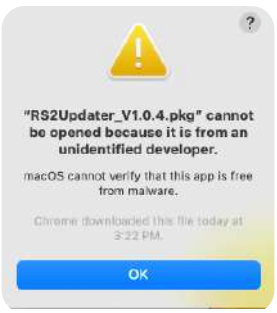
DOWNLOAD & INSTALL APPLICATION

WINDOWS OS

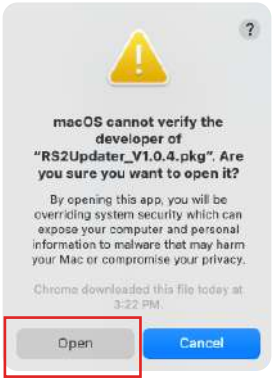
1. From your Windows PC, download the software by clicking on this link: DOWNLOAD
   - The application **"OBDToolUpdaterPC_V1.x.x_Live.exe"** begins downloading to your Windows PC.
2. Locate the downloaded application and double click the file to begin installation.
   - If a Windows protection pop-up displays.
     - Click on the **"More info"** link.
     - Click on **"Run Anyway"** to proceed with the installation.
3. The InstallShield Wizard launches.
4. Follow the prompts to complete the installation.
   - See **Updating Your Scan Tool** section to proceed.

MAC OS

1. From your Mac, download the software by clicking on this link: DOWNLOAD
   - The file **"RS2UpdaterMac_V1.x.x_Live.zip"** begins downloading to your Mac.
2. Locate the downloaded application in your Downloads folder.
3. Unzip the file and double click the **"RS2Updater_V1.x.x.pkg"** file to begin installation.
   - If the following security protection pop-up displays, click **OK** to close the window.
     - 'Right click' on the **RS2Updater_V1.x.x.pkg** file and click **"Open."**



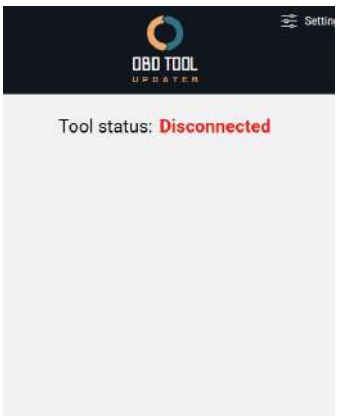
     - Safely continue the installation by clicking the **"Open"** button.



4. Follow the prompts to complete the installation.
   - See **Updating Your Scan Tool** section to proceed.

UPDATING YOUR SCAN TOOL

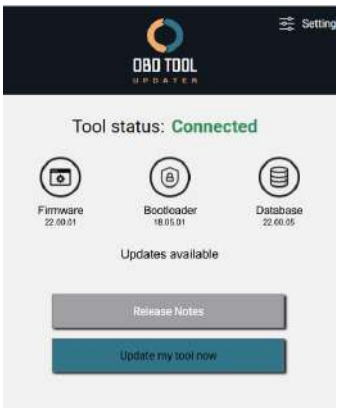
1. Locate and open the **"OBD Tool Updater"** application.
   - Click to launch it.
   - Once open, the software will initially display "**Disconnected**".



2. Using a standard USB cable, connect your tool to your computer.
   - Wait a few seconds for the software to detect it.

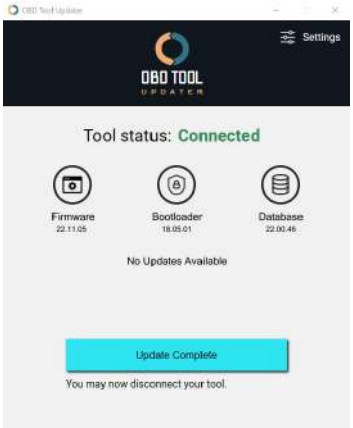
NOTE: *If using a USB charging cable, and not a USB data cable, you will get the 'Disconnected' message. Charging Cables: Can only charge devices, but cannot transfer data. These are commonly called 'Charge-only' cables. Data Cables: Does both; charges your devices and transfers data.*

3. Upon a good connection, the status changes to "**Connected**" and displays the tool's current Firmware, Bootloader, and Database versions.
   - Wait a few more seconds for the software to check for updates.
   - If an update is available, the "Update my tool now" message displays.
   - If an update is not available, a "No Updates Available" message displays.



4. If an update is available, click the "**Update my tool now**" button to begin.
   - The update is divided into individual steps such as bootloader, firmware, and database. Please be aware that this ***process may take up to 25 minutes***. Do not disconnect the tool or close the app until all updates have been completed.
   - Click on the "**Release Notes**" button to view what features and functions were added or corrected with this new version.

5. If the update was successful, the message “Update Complete” displays. At this point the tool has been updated and can be safely disconnected.



- If an error occurred during the update, the progress bar turns red and stops with the message “Update Error”. Please disconnect the tool and follow the steps indicated above to attempt the update process again.

TROUBLESHOOTING TIPS

1. Tool is connected to the computer, but the app displays a ‘**Disconnected**’ status.
   - Please make sure the USB data cable connections at the computer and your tool are properly seated.
   - Try switching to a different USB port.
   - Try using another USB cable.
   - Make sure you are using the right Updater. Older model tools are not compatible with the new OBD2 Tool Updater.
2. Tool is connected, but you do not see the “**Update my tool now**” button.
   - That means your tool is up to date and there are no new updates for your tool.
3. The update is **stuck at 1% (or 5%)** and not progressing.
   - Please install the latest updater for your tool. Visit Innova.com/support to get the latest software.
   - Reboot your computer.
   - Disable any Antivirus software running in the background.
   - Attempt the update again by following the steps indicated above.

OBD1 DIAGNOSTICS

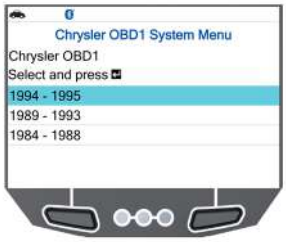
The Scan Tool provides diagnostic capabilities for OBD1 vehicles manufactured between 1981 and 1995, including Chrysler/Jeep, Ford Cars and Trucks Vans, Honda, GM, and Toyota.

CHRYSLER/JEEP OBD1 SYSTEMS

1. Locate the vehicle's Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting to the Scan Tool.*

2. Connect the Scan Tool (with the Chrysler Connector Cable Adaptor attached) to the vehicle's DLC.
   - Set the parking brake, and make sure all vehicle accessories are turned off.
   - Turn the ignition **ON. DO NOT** start the engine.
3. The Chrysler OBD1 System Menu displays.
4. To retrieve codes from the vehicle's computer:
   - Press the **UP** ▲ or **DOWN** ▼ buttons, as necessary, to highlight the year of the vehicle, then press **ENTER** ↵.



5. A "One moment please…" message displays while codes are being retrieved.
   - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" message displays.
     - Verify the ignition is **ON**.
     - Check the cable connections at the Scan Tool and at the vehicle's DLC.
     - Turn the ignition **OFF**, wait 10-12 seconds, then turn back **ON** to reset the computer.
     - Press the **POWER/LINK** ⏻◁▷ button to continue.
   - If the Scan Tool cannot link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.
6. If the Scan Tool was able to link to the vehicle successfully, the Scan Tool displays the retrieved Diagnostic Trouble Codes (DTCs).
   - The Scan Tool will display a code only if codes are present. If no codes are present, the message "No DTCs are presently stored in the vehicle's computer" displays.

7. Press the ⌫ **ERASE** button to erase **ALL** retrieved DTCs.

FORD OBD1 SYSTEMS

OVERVIEW OF FORD CODE RETRIEVAL PROCESS

Ford's computer self-diagnostic system is divided into four main sections:

1. "Key On Engine Off" (KOEO) Self-Test.
2. "Continuous Memory" (CM) Self-Test.
3. "Key On Engine Running" (KOER) Self-Test.
4. Other EEC-IV System tests.

These Self-Tests are designed to monitor and/or test the components and circuits that are controlled by the vehicle's computer, and to save and/or transmit test results to the Scan Tool. The "Continuous Memory" Self-Test is designed to run continuously whenever the vehicle is in normal operation. If a fault is detected by the "Continuous Memory" Self-Test, a fault code is saved in the vehicle's computer memory for later retrieval. Self-Tests are designed in such a way that to properly diagnose a problem, you must perform all of the Self-Tests, in the proper sequence.

If you fail to perform a test, or you perform a test out of sequence, you might miss a problem that is only detected during that part of the test.

KEY ON ENGINE OFF (KOEO) TEST

During the KOEO Self-Test, two groups of codes are retrieved.

- The first group of codes are called "KOEO codes". A "KOEO" icon displays to indicate the code is a "KOEO" code.
- The second group of codes are called "Continuous Memory" codes. A "Continuous Memory" icon displays to indicate the code is a "Continuous Memory" code.

NOTE: *Check the vehicle thoroughly before performing any test.*

1. Locate the vehicle's Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting to the Scan Tool.*

2. Connect the Scan Tool (with the Ford Connector Cable Adaptor attached) to the vehicle's DLC. Connect the Scan Tool to **BOTH** connectors. Press the **POWER/LINK** button to turn the Scan Tool **ON**.
3. The Ford OBD1 System Menu displays.
4. Highlight **KOEO Test**, then press the **ENTER** button.
   - The LCD display shows instructions to prepare the vehicle for the KOEO Test.
5. Start and warm the engine to normal operating temperature, then press the **ENTER** to continue.

6. Turn the ignition key **OFF** and wait for the on-screen prompt.
7. Turn the ignition **ON. DO NOT** start the engine. If the vehicle is equipped with one of the following engine types, perform the added procedures described below:
   - **For 4.9L engines with standard transmission:** Press and hold the clutch until all codes are sent (steps 7 through 9).
   - **For 7.3L diesel engines:** Press and hold accelerator until all codes are sent (steps 7 through 9).
   - **For 2L turbo engines with octane switch:** Put switch in premium position.
8. Press the **ENTER** ↵ button to continue.
9. A "One moment please. KOEO test is in progress…" message displays while codes are being retrieved.

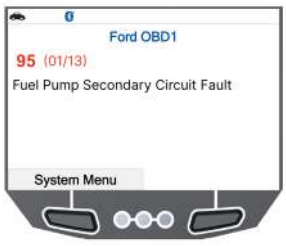
NOTE: *When the ignition is turned "on," the vehicle's computer enters the Self-Test mode. Clicking sounds will be heard. This indicates the vehicle's computer is activating relays, solenoids, and other components to check their operation.*

WARNING: *On some vehicles equipped with an Electric Cooling Fan, the computer activates the cooling fan to check its operation. To avoid injury, keep your hands or any part of your body a safe distance from the engine during this test.*

- If the Scan Tool fails to link to the vehicle's computer, a "Vehicle is not responding" message displays.
  - Verify the ignition is **ON**.
  - Check the cable connections at the Scan Tool and at the vehicle's DLC.
  - Turn the ignition **OFF**, wait 10 seconds, then turn back **ON** to reset the computer. Press the **ENTER** ↵ button to continue.
- If the Scan Tool cannot link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.

10. If the Scan Tool was able to link to the vehicle successfully a "Code retrieval was successful..." message displays temporarily, followed by any retrieved Diagnostic Trouble Codes (DTCs).

NOTE: *Most Ford EEC-IV vehicle computers up to 1991 use a two-digit code system. From 1991 to 1995 most use a three-digit code system.*



- The Scan Tool will display a code only if codes are present in the vehicle's computer memory.
- If no problems are found during the KOEO Self-Test, the computer sends a PASS code (code 11 or 111) to the Scan Tool.
- If no Continuous Memory codes are present in the vehicle's computer memory, the Scan Tool displays a PASS code (code 11 or 111).
- The Scan Tool will display a code only if codes are present. If no codes are present, the message "No DTCs are presently stored in the vehicle's computer" displays.

11. Press the **ERASE** button to erase **ALL** retrieved DTCs.
12. Disconnect the Scan Tool from the vehicle and turn the ignition key **OFF**.
13. To prolong battery life, the Scan Tool automatically shuts **OFF** after approximately three minutes of no button activity. The DTCs retrieved will remain in the Scan Tool's memory and may be viewed at any time. If the Scan Tool's batteries are removed, or if the Scan Tool is re-linked to a vehicle to retrieve codes, any prior codes in its memory are automatically cleared.
14. Follow the testing and repair procedures outlined in the vehicle's service repair manual to correct "hard" DTCs. Codes should be addressed and eliminated in the order they were received, erasing, and retesting after each repair is done to be sure the fault was eliminated.

NOTE: *Before "Continuous Memory" codes can be serviced, both the KOEO and the KOER Self-Tests must pass (a PASS code 11 or 111 is obtained). After both of these tests have passed, erase the vehicle's computer memory, take the vehicle for a short drive, then repeat the KOEO Self-Test. If any Continuous Memory faults are present, service them all this time.*

NOTE: *Do not proceed to the ignition timing check procedure or the KOER test until a PASS code (code 11 or 111) for KOEO test is obtained.*

ENGINE TIMING CHECK

NOTE: *Before performing the KOER Self-Test, the vehicle's Ignition Base Timing and the computer's ability to electronically control timing advance must be checked for proper operation.*

NOTE: *This procedure is only applicable to 1992 and older vehicles (excluding diesel engines). For 1993 and newer vehicles, refer to the vehicle's service repair manual for procedures to check and adjust timing.*

For 1992 and older vehicles, the Scan Tool can be used in combination with a timing light to check ignition timing and the vehicle computer's ability to advance ignition timing.

NOTE: *Check the vehicle thoroughly before performing any test.*

NOTE: ALWAYS *observe safety precautions whenever working on a vehicle.*

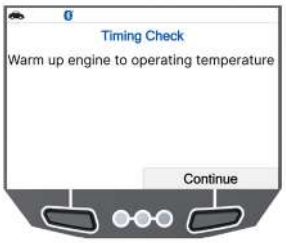
- A timing light is required to perform this test.
- The vehicle must pass the KOEO Test before performing this test.

1. Locate the vehicle's Data Link Connector (DLC).

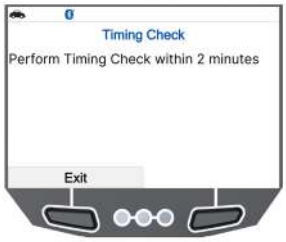
NOTE: *Some DLCs have a plastic cover that must be removed before connecting to the Scan Tool.*

2. Connect the Scan Tool (with the Ford Connector Cable Adaptor attached) to the vehicle's DLC. Connect the Scan Tool to **BOTH** connectors. Press the **POWER/LINK** button to turn the Scan Tool on, then press the **ENTER** button to continue.

3. The Ford OBD1 System Menu displays.
4. Highlight **Timing Check**, then press **ENTER** ↵.
   - The Select Model Year screen displays.
5. Highlight the vehicle model year, then press **ENTER** ↵.
   - **For 1993 and newer vehicles**: The message "Follow instructions in vehicle service manual to perform timing check" displays. Press the **SYSTEM MENU** Ⓢ button to return to the Ford Menu. Refer to the vehicle service manual for procedures.



   - **For 1992 and older vehicles**: The message "Warm up engine to operating temperature" displays.
6. Start and warm the engine to normal operating temperature. Press **ENTER** ↵ to continue.
7. When prompted, turn off all vehicle accessories, turn the ignition key **OFF** and wait for the on-screen prompt. If you wish to exit the Timing Check procedure at this time, press the **SYSTEM MENU** Ⓢ button.
8. When instructed, start the engine, and press **ENTER** ↵.
   - A "One moment please preparation for test is in progress" message displays temporarily, followed by the message "Perform Timing Check within 2 minutes."
9. Perform the Timing Check as follows:
   - The vehicle's computer is programmed to advance ignition timing 20° (±3°) above the vehicle's "base timing" value, and to freeze this setting for two minutes from the time the "Perform Timing Check within 2 minutes" message displays.
   - Within this two-minute period, follow instructions in the vehicle's service repair manual to check the ignition timing with a timing light and ensure that it is 20° (±3°) above the specified base timing value.



10. If timing light readings are within the acceptable range:
    - Base timing and the vehicle computer's ability to advance timing are working properly.
    - Proceed to the KOER Self-Test.
11. If timing light readings are not within the acceptable range:
    - Base timing may be out of adjustment, or the computer may have problems with the timing advance circuit.
    - Refer to the vehicle's service repair manual for procedures on adjusting and/or repairing ignition timing. Repairs to ignition timing must be made before proceeding to the KOER Test.

KEY ON ENGINE RUNNING (KOER) SELF-TEST

NOTE: *Check the vehicle thoroughly before performing any test.*

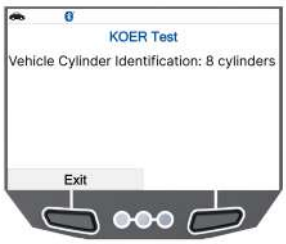
NOTE: ALWAYS *observe safety precautions whenever working on a vehicle.*

- The vehicle must pass the KOEO Test before performing this test.
- The vehicle must pass the Engine Timing Check before performing this test.

1. Locate the vehicle's Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting the Scan Tool cable connector.*

2. Connect the Scan Tool (with the Ford Connector Cable Adaptor attached) to the vehicle's DLC. Connect the Scan Tool to **BOTH** connectors. Press the **POWER/LINK** button to turn the Scan Tool On, then press the **ENTER** button to continue.
3. The Ford OBD1 System Menu displays.
4. Highlight **KOER Test**, then press **ENTER**.
   - The message "Make sure ignition timing is within factory specifications" displays. If necessary, press the **SYSTEM MENU** button to return to the Ford Menu and perform an Engine Timing Check. Otherwise, press the **ENTER** button to continue.
5. The message "Warm up engine to operating temperature" displays. Start and warm the engine to normal operating temperature. Press the **ENTER** button to continue.
6. When prompted, turn off all vehicle accessories, turn the ignition key **OFF**. If you wish to exit the KOER test at this time, press the **SYSTEM MENU** button.
7. When instructed, start the engine, and press the **ENTER** button to continue. A "One moment please KOER test is in progress..." message displays temporarily.
8. The Scan Tool retrieves the Cylinder Identification (ID) Code. (identifies the number of cylinders for the vehicle under test).
   - If the Scan Tool cannot retrieve the Cylinder ID Code, an "advisory" message displays. Press the **SYSTEM MENU** button to exit and repeat the Key On Engine Off (KOEO) test until DTC 11 or 111 displays.



9. Perform the following procedures when prompted.
   - Turn the steering wheel 1/2 turn to right, hold for four seconds and release.
   - Press the brake pedal to the floor and then release it.
   - Cycle the Overdrive Switch (if equipped).
   - Quickly press the accelerator pedal to the floor and then release it.
10. After the above procedures are performed a "One moment please KOER test is in progress..." message displays temporarily, followed by a "Retrieving codes" message.

    NOTE: *Most Ford EEC-IV vehicle computers up to 1991 use a two-digit code system. From 1991 to 1995 most use a three-digit code system.*

    - If the Scan Tool fails to link to the vehicle's computer, a "Vehicle is not responding" message displays.
      - Verify the ignition is **ON**.
      - Check the cable connections at the Scan Tool and at the vehicle's DLC.

— Turn the ignition **OFF**, wait 10 seconds, then turn back **ON** to reset the computer.

— Press **ENTER** ↵ to continue.

- The Scan Tool displays a code only if codes are present in the vehicle's computer memory. If no codes are present, a "No DTCs are presently stored in the vehicle's computer" message displays.

11. If no problems are found during the KOER Self-Test, the computer sends a "PASS code" (code 11 or 111) to the Scan Tool.

12. Press the **ERASE** button to erase **ALL** retrieved Diagnostic Trouble Codes (DTCs).

13. Turn the engine off and disconnect the Scan Tool from the vehicle's test connectors.

NOTE: *All etrieved DTCs will remain in the Scan Tool's memory. If the KOER Test procedure is performed again, DTCs from a prior test will automatically clear and will be replaced by the most current DTCs retrieved.*

14. All KOER codes that are retrieved by the Scan Tool during the KOER Self-Test represent problems that are present now (at the time the test is performed). The related vehicle problems that caused the codes to be set must be repaired using the procedures described in the vehicle's repair manual.

15. After all repairs have been completed, repeat the KOER Self-Test.

16. If a "pass code" (code 11 or 111) is received, it indicates that the repairs were successful, and all of the related systems are working properly.

17. If a "pass code" (code 11 or 111) is not received, the repair was unsuccessful. Consult the vehicle's service manual and recheck the repair procedure.

CYLINDER BALANCE TEST

The Cylinder Balance Test assists in finding a weak or noncontributing cylinder. The computer shuts off fuel (cuts off power to injectors) to each cylinder, in sequence, and monitors for RPM changes (drop). Based on this information, the computer determines if all of the cylinders are contributing power equally (for proper engine operation), or if some cylinders are only contributing partially or not contributing at all.

NOTE: *Check the vehicle thoroughly before performing any test.*

NOTE: ALWAYS *observe safety precautions whenever working on a vehicle.*

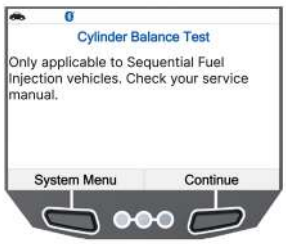
1. Locate the vehicle's Data Link Connector (DLC).

NOTE: *Some DLCs have a plastic cover that must be removed before connecting the Scan Tool cable connector.*

2. Connect the Scan Tool (with the Ford Connector Cable Adaptor attached) to the vehicle's DLC. Connect the Scan Tool to **BOTH** connectors. Press the **POWER/LINK** ⏻ button to turn the Scan Tool ON, then press the **ENTER** ↵ button to continue.

3. The Ford OBD1 System Menu displays.

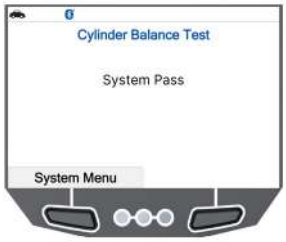
4. Highlight **Cylinder Balance Test**, then press the **ENTER** ↵ button.
   - An "advisory" message displays. If the vehicle **is not** equipped with Sequential Electronic Fuel Injection (SEFI), use the softkeys to exit. Otherwise, press the **ENTER** ↵ button to continue.



5. An instructional message display. Start and warm the engine to normal operating temperature. Press the **ENTER** ↵ button to continue.
6. When prompted, turn off all vehicle accessories, turn the ignition key **OFF** and wait for the on-screen prompt. If you wish to exit the Cylinder Balance Test at this time, press the **SYSTEM MENU** Ⓢ button.
7. When instructed, start the engine, and press the **ENTER** ↵ button.
   - A "One moment please preparation for test is in progress..." message displays temporarily.
8. When prompted, lightly press the accelerator pedal halfway and release to activate the cylinder balance test.

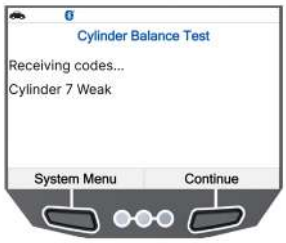
NOTE: For 1986 models ONLY: *Fully press accelerator once and release.*

   - The computer is now in Cylinder Balance Test mode and will start cutting fuel to each cylinder in sequence to determine if all of the cylinders are contributing equally. **It may take up to five minutes before the test results are transmitted to the Scan Tool**.



9. If the vehicle's computer fails to enter Cylinder Balance Test mode, do the following:
   - Lightly press the accelerator pedal again as described in **step 7**.
10. After the Cylinder Balance Test is completed, the test results are sent to the Scan Tool.
11. If all cylinders are contributing equally, a "System Pass" message displays.

NOTE: *If the computer detects a problem with one or more cylinders when performing the initial Cylinder Balance Test, it needs to repeat the test two more times to properly determine which cylinder or cylinders are malfunctioning.*



12. If a cylinder is not contributing at the same level as the other cylinders, the computer prompts you to repeat the test two more times by displaying the "Lightly press the accelerator halfway and release" message again. Each time the message displays, perform the procedures as instructed.
13. After the Cylinder Balance tests have completed, the computer will identify and display which cylinder (or cylinders) are not contributing equally.
   - If any weak cylinders are identified, consult the vehicle's service repair manual to perform further testing and/or repairs.

RELAY AND SOLENOID TEST (OUTPUT STATE CHECK)

The "Output State Check" lets you energize (turn **ON**) and de-energize (turn **OFF**), on command, most of the actuators (relays and solenoids) that are controlled by the vehicle's computer.

Use this test to check computer output voltages and relay/solenoid operation.

NOTE: *The fuel injectors and fuel pump are not energized during this test.*

NOTE: *Check the vehicle thoroughly before performing any test.*

NOTE: ALWAYS *observe safety precautions whenever working on a vehicle.*

1. Locate the vehicle's Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting the Scan Tool cable connector.*

2. Connect the Scan Tool (with the Ford Connector Cable Adaptor attached) to the vehicle's DLC. Connect the Scan Tool to **BOTH** connectors. Press the **POWER/LINK** button to turn the Scan Tool ON, then press the **ENTER** button to continue.
3. The Ford OBD1 System Menu displays.
4. Highlight **Output State Test**, then press **ENTER**.
5. The message "Warm up engine to operating temperature" displays. Start and warm the engine to normal operating temperature. Press **ENTER** to continue.
6. When prompted, turn the ignition key **OFF** and wait for the on-screen prompt. If you wish to exit the Output State Check at this time, press the **ENTER** button.
7. When prompted, turn the ignition **ON. DO NOT** start the engine. If the vehicle is equipped with one of the following engine types, perform the added procedures described below:
   - **For 4.9L engines with standard transmission:** Press and hold the clutch until the "Output State Check Active" screen displays.
   - **For 7.3L diesel engines:** Press and hold accelerator until the "Output State Check Active" screen displays.
   - **For 2L turbo engines with octane switch:** Put switch in premium position.
8. Press the **ENTER** button to continue.
9. A "One moment please test is in progress..." message displays.

   NOTE: *When the ignition is turned on, the vehicle's computer enters the Self-Test mode. Clicking sounds will be heard. This is normal.*

   WARNING: *On some vehicles equipped with an Electric Cooling Fan, the computer activates the cooling fan to check its operation. To avoid injury, keep your hands or any part of your body a safe distance from the engine during this test.*

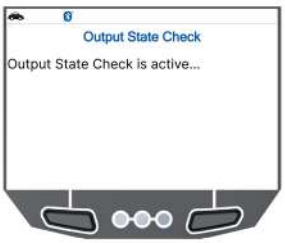
   - If the Scan Tool fails to link to the vehicle's computer, a "Vehicle is not responding" message displays.
     - — Verify the ignition is **ON**.
     - — Check the cable connections at the Scan Tool and at the vehicle's DLC.

— Turn the ignition **OFF**, wait 10 seconds, then turn back **ON** to reset the computer.

NOTE: *BE SURE to perform the added procedures in* ***step 7****, if appropriate, BEFORE turning the ignition* ***ON****.*

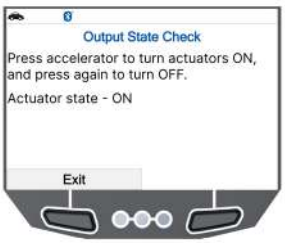
— Press the **ENTER** ↵ button to continue.

- If the Scan Tool **cannot** link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.



10. If the Scan Tool was able to link to the vehicle successfully an "Output State Check active..." message displays temporarily, followed by a display that instructs you how to perform the test.
11. When prompted, press the accelerator pedal once, then release. This activates the Output State Check and energizes most of the actuators (relays and solenoids) that are controlled by the vehicle's computer.

NOTE: *If the vehicle is equipped with an Integrated Vehicle Speed Control, disconnect the vacuum supply hose from the speed control servo before pressing the accelerator. Reconnect the vacuum hose after the test.*



12. To de-energize the actuators, press the accelerator pedal again and release.
13. The procedure can be repeated as many times as desired by pressing and releasing the accelerator pedal.
14. Consult the vehicle's service repair manual for a list of actuators (solenoids and relays) controlled by the computer that apply to the vehicle under test, and which actuators should energize and de-energize when performing the Output State Check. All applicable actuators should be on when energized and off when de-energized.
15. If an actuator is not responding to the Output State Check, follow the procedures described in the vehicle's service manual to check computer actuator output circuit voltages and/or grounds.
16. To exit the Output State Check, turn the ignition **OFF** and disconnect the Scan Tool from the vehicle.

WIGGLE TEST

NOTE: *Since any DTCs from Wiggle Test results are saved in Continuous Memory, it is suggested that you clear any DTCs in Continuous Memory before performing the Wiggle Test.*

Use this test to check for intermittent faults in some circuits.

Circuits Tested:

1984 & Newer - Air Charge Temp Sensor (ACT), Barometer Pressure Sensor (BP), Engine Coolant Temp Sensor (ECT), Exhaust Gas Oxygen Sensor (EGO), EGR Valve Position Sensor (EVP), Manifold Absolute Pressure (MAP), Throttle Position Sensor (TP), Vane Air Temp Sensor (VAT).

1985 & Newer - Vane Air Flow Sensor (VAF).

1986 & Newer - Pressure Feedback EGR Sensor (PFE).

1990 & Newer - Exhaust Gas Oxygen Sensor (EGO), Ignition Diagnostic Monitor (IDM) (DIS or Dual Plug DIS only), Idle Tracking Switch (ITS), Mass Air Flow Sensor (MAF).

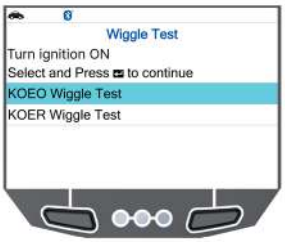
NOTE: *Check the vehicle thoroughly before performing any test.*

NOTE: ALWAYS *observe safety precautions whenever working on a vehicle.*

1. Locate the vehicle's Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting the Scan Tool cable connector.*

2. Connect the Scan Tool (with the Ford Connector Cable Adaptor attached) to the vehicle's DLC. Connect the Scan Tool to **BOTH** connectors. Press the **POWER/LINK** button to turn the Scan Tool ON, then press **ENTER** ↵ to continue.
3. The Ford OBD1 System Menu displays.
4. Highlight **Wiggle Test**, then press **ENTER** ↵.
5. The message "Warm up engine to operating temperature" displays. Start and warm the engine to normal operating temperature. Press the **ENTER** ↵ button to continue.
6. When prompted, turn the ignition key **OFF** and wait for the on-screen prompt. If you wish to exit the Wiggle Test at this time, press the **ENTER** ↵ button.



7. Select the desired Wiggle Test from the displayed menu.
   - To perform the KOEO Wiggle Test:
     - Highlight **KOEO Wiggle Test**.
     - Turn the ignition **ON. DO NOT** start the engine.
     - Press the **ENTER** ↵ button to continue.
   - To perform the KOER Wiggle Test:
     - Highlight **KOER Wiggle Test**.
     - Turn the ignition **ON** and start the engine.
     - Press the **ENTER** ↵ button to continue.
8. A "One moment please test is in progress" message displays temporarily.
   - If the Scan Tool fails to link to the vehicle's computer, a "Vehicle is not responding" message displays.

   For KOEO Wiggle Test:

   - Verify the ignition is **ON**.

— Turn the ignition **OFF**, wait 10 seconds, then turn back **ON** to reset the computer. Press the **ENTER** ↵ button to continue.

For KOER Wiggle Test:

— Turn the ignition **OFF**, wait 10 seconds, then turn back **ON** to reset the computer. Press the **ENTER** ↵ button to continue.

— If the Scan Tool **cannot** link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.

9. If the Scan Tool was able to link to the vehicle successfully, a "Wiggle test is active..." message displays temporarily, followed by a message instructing you how to perform the test.
   - Press the **SYSTEM MENU** button if you wish to exit the Wiggle Test at this time.
10. Wiggle, tap and move the suspected sensor or wiring.
    - If no faults are detected, a "System Pass" message displays.
    - If a fault is detected, a "Circuit Fault detected" message displays.

NOTE: *If the Wiggle Test detects any problems, a related DTC is stored by the computer in "Continuous Memory". To view any Wiggle Test DTCs you must perform the KOEO Test.*

11. Follow the procedures in the vehicle's service repair manual to perform troubleshooting and repairs for Wiggle Test results.
12. The Wiggle Test will stay active as long as desired. To exit the Wiggle Test, turn the ignition **OFF** and disconnect the Scan Tool.

GM OBD1 SYSTEMS

This Scan Tool may be used to retrieve engine service codes from most General Motors (GM) domestic cars and trucks (EXCEPT Geo, Nova, Saturn, and Sprint).

NOTE: *Check the vehicle thoroughly before performing any test.*

NOTE: ALWAYS *observe safety precautions whenever working on a vehicle.*

1. Locate the vehicle's Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting the Scan Tool.*

2. Connect the Scan Tool (with the GM Connector Cable Adaptor attached) to the vehicle's DLC. Press the **POWER/LINK** button to turn the Scan Tool ON, then press the **ENTER** ↵ button to continue.
   - An instructional message displays.
3. Turn the ignition **ON**. Turn all vehicle accessories **OFF**. Select **Continue**, then press the **ENTER** ↵ button.

- The Select Vehicle Year screen displays.
  - Highlight the desired year, then press **ENTER** ↵; the Enter 8th VIN menu displays.

4. Highlight the 8th digit of the vehicle's VIN, then press **ENTER** ↵.

   NOTE: *If the "Enter 4th VIN Digit" screen displays (not applicable to all vehicles), highlight the 4th digit of the vehicle's VIN, then press* ***ENTER*** ↵.

   NOTE: *If the "Truck" screen displays (not applicable to all vehicles), highlight* ***Yes*** *or* ***No****, as appropriate, then press* ***ENTER*** ↵.

5. When the Scan Tool is in the process of retrieving codes, a "One moment please..." message displays.
   - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" screen displays.
     - Verify the ignition is **ON**.
     - Check the cable connections at the Scan Tool and at the vehicle's DLC.
     - Turn the ignition **OFF**, wait 10-12 seconds, then turn back **ON** to reset the computer.
     - Press the **POWER/LINK** button.

6. If the Scan Tool was able to link to the vehicle successfully, the Scan Tool displays the retrieved Diagnostic Trouble Codes (DTCs).
   - The Scan Tool will display a code only if codes are present in the vehicle's computer memory. If no codes are present, a "No DTCs are presently stored in the vehicle's computer" message displays.
7. Code 12 will always be present, and it has one of the following meanings
   - If code 12 is the only DTC retrieved and the vehicle "STARTS OK" then code 12 indicates system "PASS", and all computer control systems are functioning properly.
   - If code 12 is present and the vehicle "DOES NOT START", then it may indicate a problem with the ignition control system.
8. Press the **ERASE** button to erase **ALL** retrieved DTCs.

HONDA OBD1 SYSTEMS

NOTE: *Check the vehicle thoroughly before performing any test.*

NOTE: ***ALWAYS*** *observe safety precautions whenever working on a vehicle.*

1. Locate the vehicle's Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting to the Scan Tool.*

2. Connect the Scan Tool (with the Honda Connector Cable Adaptor attached) to the vehicle's DLC. Press the **POWER/LINK** button to turn the Scan Tool ON, then press the **ENTER** button to continue.
   - An instructional message displays.
     - Turn the ignition key **ON**.
     - Make sure the throttle is fully closed.
     - Make sure the emergency brake is applied.
     - Place the transmission in neutral.
     - Turn all vehicle accessories **OFF**.
3. Highlight **Read DTCs** and press **ENTER** to continue.
4. When the Scan Tool is in the process of retrieving codes, a "One moment please..." message displays.
   - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" screen displays.
     - Verify the ignition is **ON**.
     - Check the cable connections at the Scan Tool and at the vehicle's DLC.
     - Turn the ignition **OFF**, wait 10-12 seconds, then turn back **ON** to reset the computer.
     - Press the **POWER/LINK** button and repeat **step 2**, as necessary.
5. If the Scan Tool was able to link to the vehicle successfully, the Scan Tool displays the retrieved Diagnostic Trouble Codes (DTCs).
   - The Scan Tool will display a code only if codes are present in the vehicle's computer memory. If no codes are present, a "No DTCs are presently stored in the vehicle's computer" message displays.
6. Press **ERASE** button to erase **ALL** retrieved DTCs.

TOYOTA OBD1 SYSTEMS

NOTE: *Check the vehicle thoroughly before performing any test.*

NOTE: ALWAYS *observe safety precautions whenever working on a vehicle.*

1. Locate the vehicle's Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting to the Scan Tool.*

2. Connect the Scan Tool (with the Toyota Connector Cable Adaptor attached) to the vehicle's DLC.
   - An instructional message displays.
     - Turn the Ignition key **ON** and start the engine. Warm the engine to operating temperature. (Shut engine off after warming up, then turn the ignition back **ON**.)

- — Make sure the throttle is fully closed.
- — Set the gear lever in “park” (for automatic transmissions) or “neutral” (for manual transmissions).
- — Turn all vehicle accessories **OFF**.

3. Highlight **Read DTCs** and press **ENTER** ↵ to continue.
4. When the Scan Tool is in the process of retrieving codes, a “One moment please...” message displays.

   - If the Scan Tool fails to link to the vehicle’s computer, a “Vehicle is not responding” message displays.
     - — Verify the ignition is **ON**.
     - — Check the cable connections at the Scan Tool and at the vehicle’s DLC.
     - — Turn the ignition **OFF**, wait 10-12 seconds, then turn back **ON** to reset the computer.
     - — Press the **POWER/LINK** ⏻ button and repeat **step 2**, as necessary.
5. If the Scan Tool was able to link to the vehicle successfully, the Scan Tool displays the retrieved Diagnostic Trouble Codes (DTCs).
   - The Scan Tool will display a code only if codes are present in the vehicle’s computer memory. If no codes are present, a “No DTCs are presently stored in the vehicle’s computer” message displays.
6. Press the **ERASE** button to erase **ALL** retrieved DTCs.

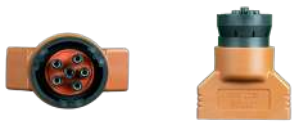
HEAVY-DUTY ON-BOARD DIAGNOSTICS (HD OBD)

GETTING THE CONNECTION

The Scan Tool provides diagnostic capabilities for commercial vehicles manufactured from 1985 to present, including: **International, Freightliner, Volvo, Dodge, MACK, Kenworth, Peterbilt, Western Star, Mitsubishi Fuso, Isuzu,** etc.

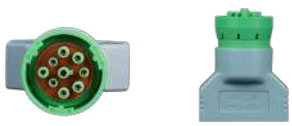
There are 4 types of the HD OBD connectors including 6-Pin connector, 9-Pin Black connector, 9-Pin Green connector, and 16-Pin connector (same as the diagnostic connector of cars).

6-Pin Connector: supports SAE J1587/J1708 standard only



9-Pin Black connector: supports both SAE J1587/J1708 standard and SAE J1939 standard (with baud rate up to 250 kbps)

9-Pin Green connector: supports both SAE J1587/J1708 standard and SAE J1939 standard (with baud rate up to 500 kbps)



16-Pin connector: supports J1979 standard

1. Locate the vehicle's Data Link Connector (DLC).
2. Connect the Scan Tool to the vehicle's DLC.
3. Turn the ignition on. **DO NOT** start the engine.
4. When the Scan Tool is properly connected to the vehicle's DLC, the unit turns **ON**.
    - The Scan Tool will detect automatically and show System Menu screen.

ALL MODULE SCAN

1. Select **All Module Scan** from the System Menu, then press **ENTER**↵.
    - A "One moment please..." message displays while the Scan Tool scans all available modules.
    - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" message displays.
2. When the scan is completed, the All Module Scan screen displays. The screen displays the number of DTCs recorded for each available module.
3. Press **Erase All DTCs** to erase all modules DTCs.
4. A "confirmation" message displays.
    - If you are sure you want to proceed, select **Erase DTCs** for a second time.
    - If you do not want to proceed, choose **Back** to cancel the erase procedure.

5. A "One moment please…" message displays while the erase function is in progress.

NOTE: *Turn the ignition key* ***ON. DO NOT*** *start the engine.*

- If the **erase was successful**, a "confirmation" message displays. The tablet automatically relinks to the vehicle's computer after 3 seconds.
- If the erase **was not successful**, an "advisory" message displays indicating the erase request was sent to the vehicle's computer. The tablet automatically relinks to the vehicle's computer after 3 seconds.

MODULE SELECTION

READING DTCS FOR A SELECTED MODULE

1. Select **Module Selection** from the System Menu, then press the **ENTER**↵ button.
    - The Available Systems screen displays.

2. Select the desired module, then press **ENTER**↵.
   - A "One moment please..." message displays while the requested DTCs are retrieved.
   - If the Scan Tool fails to connect to the selected module, a "Communication Error" message displays. Follow the on-screen instructions and attempt the process again.
   - If the selected module does not support the "Read DTC" function, an "advisory" message displays. Choose the **SYSTEM MENU** to return to the System Menu.

3. When the scan is completed, the screen displays the number of DTCs recorded for the selected module.

NOTE: *If the definition for the currently displayed code is not available, an "advisory" message displays.*

NOTE: *In the case of long code definitions, a small arrow is shown in the upper/ lower right-hand corner of the code display area to indicate the presence of additional information.*

- If no codes are present, the message "No [system name] DTCs is presently stored in the vehicle's computer" displays.

ERASING DTCS FOR A SELECTED MODULE

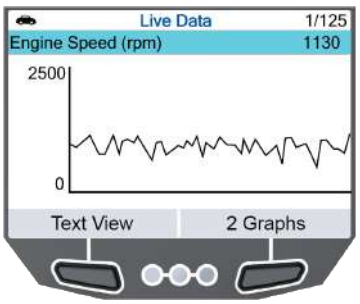
1. Perform the **Reading DTCs For A Selected Module** procedure. [See page 81]
2. Press and release **ERASE**.
   - A "confirmation" message displays.
   - If you are sure you want to proceed, select **Erase DTCs** to continue.
3. A "One moment please…" message displays while the erase function is in progress.

NOTE: *Turn the ignition key* ***ON. DO NOT*** *start the engine.*

- If the **erase was successful**, a "confirmation" message displays. The Scan Tool automatically relinks to the vehicle's computer after 3 seconds.
- If the erase **was not successful**, an "advisory" message displays indicating the erase request was sent to the vehicle's computer. The Scan Tool automatically relinks to the vehicle's computer after 3 seconds.

VIEWING LIVE DATA FOR A SELECTED MODULE

1. From the Module Selection screen, highlight the system for which you wish to view Live Data then press the **LD** button.
2. A "One moment please..." message displays while the Scan Tool establishes communication with the vehicle.
   - If the Scan Tool fails to establish communication with the vehicle, a "Communication Error" message displays.
     - Verify the connection at the DLC, and verify the ignition is **ON**.
     - Turn the ignition **OFF**, wait 5 seconds, then turn back **ON** to reset the computer.
     - Press **ENTER** ↵ to continue.
3. Real-time Live Data (PID) information supported by the vehicle under test displays.
   - If Live Data is not supported by the vehicle under test, an "advisory" message displays. Choose **Relink** to try again, or choose **SYSTEM MENU** Ⓢ to return to the System Menu.
4. Choose **Graph** to view the currently selected PID in "graph" mode. Choose **Text View** to return to the PID list.
   - With one PID displays in "graph" mode, choose **2 Graphs** to graph an additional PID.
   - With two PIDs display in "graph" mode, choose **4 Graphs** to graph two additional PIDs.
   - With four PIDs display in "graph" mode, press **ENTER** ↵ to select each PID to Superimpose.
   - Choose **1 Graph** to return to the first PID selected for "graph" mode display, or choose **Text View** to return to the PID list.



5. When you finish viewing live data, press **Back** to return to the Module Selection screen.

FAQ

COMMON QUESTIONS

What can the Scan Tool do for my vehicle?

Please check the coverage on our Coverage Checker website. https://www.innova.com/pages/coverage?ad=aaa

What should I do if a communication error occurs?

Please follow these steps to troubleshoot the issue:

1. Check if the Scan Tool DLC cable is securely plugged into the vehicle's DLC port.
2. Turn the ignition off, then turn it on again after 10 seconds. **DO NOT** start the engine and proceed with the operation.
3. Check if the vehicle's control module is defective.

Can the Scan Tool be used in other countries?

The Scan Tool only supports diagnostics for vehicles sold in the U.S. and Canada. For vehicles manufactured in other countries, the Scan Tool only supports the Check Engine Light function.

How can I check if my tool is updated to the latest version?

Please visit our website https://innova-electronics.helpscoutdocs.com and select **Scanner Updates** to check out the latest updates.

Why do I need to connect to the RS2 app?

The RS2 app provides a wide range of valuable information for your repair process, including the most likely component/system causing the DTC, predicted repairs, TSBs & Recalls, vehicle health reports, upcoming maintenance, and more.

WARRANTY + CUSTOMER SERVICE

LIMITED WARRANTY

The Manufacturer warrants to the original purchaser that this unit is free of defects in materials and workmanship under normal use and maintenance for a period of one (1) year from the date of original purchase.

If the unit fails within the one (1) year period, it will be repaired or replaced, at the Manufacturer's option, at no charge, when returned prepaid to the Service Center with Proof of Purchase. The sales receipt may be used for this purpose. Installation labor is not covered under this warranty. All replacement parts, whether new or remanufactured, assume as their warranty period only the remaining time of this warranty.

This warranty does not apply to damage caused by improper use, accident, abuse, improper voltage, service, fire, flood, lightning, or other acts of God, or if the product was altered or repaired by anyone other than the Manufacturer's Service Center.

The Manufacturer, under no circumstances shall be liable for any consequential damages for breach of any written warranty of this unit. This warranty gives you specific legal rights, and you may also have rights, which vary from state to state. This manual is copyrighted with all rights reserved. No portion of this document may be copied or reproduced by any means without the express written permission of the Manufacturer. THIS WARRANTY IS NOT TRANSFERABLE. For service, send via U.P.S. (if possible) prepaid to Manufacturer. Allow 3-4 weeks for service/repair.

CUSTOMER SERVICE

Our ASE Certified technical staff is here to help if you have any questions or require service. For information on UPDATES and OPTIONAL ACCESSORIES, please contact your local store, distributor or Innova's Service Center.

USA & Canada: (800) 544-4124
Monday through Friday: 6:00 AM to 6:00 PM Pacific Time

All others: (714) 241-6802
Monday through Friday: 6:00 AM to 6:00 PM Pacific Time

Email: customercare@innova.com

Web: www.innova.com

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