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RevUp - Smarter Solutions for Faster Repairs

Join this hands-on, in-person training hosted by Dorman Training Center and Motor Age Training—a full-day event designed to sharpen your diagnostic skills and deepen your understanding of advanced vehicle repair.

Attendees must choose one class to attend per session.

MORNING SESSION:

- **Upping Your Diagnostic Skills**
  Instructor: Jerry "G" Truglia
- **Diagnostic Strategies**
  Instructor: Pete Meier

AFTERNOON SESSION:

- **Building Your Diagnostic Worksheet**
  Instructor: Ken Zanders
- **Driving Down the Rabbit Hole**
  Instructor: Josh Weaver

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Location:
Automotive Training Center
900 Johnsville Blvd.
Warminster, PA 18974

Date:
September 20, 2025

- **Morning Session:**
  8:30 a.m. EST
- **Afternoon Session:**
  1:30 p.m. EST

Instructors:
Jerry "G" Truglia, Pete Meier,
Ken Zanders, Josh Weaver

Price: $149.95

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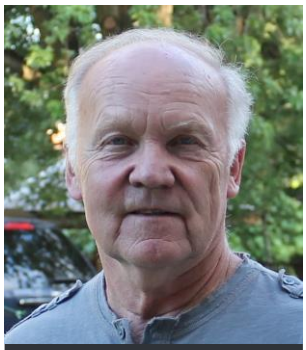
Your Instructor For This Webinar

- **Owner, O&K Truck and Auto Repairs Ltd.**
- **ATTP Master Instructor, New York State**
- **Author, "Medium/Heavy Duty Truck Electricity and Electronics"**
- **Training provider for various Associations, industry and various NY State agencies**
- **Developed trainings that range from four hours to multiple days, specializing in brakes, electrical, regulations and many other subjects relating to our industry.**
- **Member of various organizations such as SAE, CVSA, TANY**



Sulev "Swede" Oun

okswede1@aol.com

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What Will Be Covered

Instructions For This Webinar

This webinar will be approx. 1 hour long

- **All slides that are presented are in your handout and are numbered**
- **Have a pen or pencil and paper for notes**
- **Questions can be asked at anytime**

01 **Why scan tools**

02 **In depth look at CanDo scantools**

03 **Live scan tool demo**

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Scan Tool Usage

Question: Who fixes the truck? Is it the tool or the technician?

- The scan tool aids the technician.
- The scan tool gathers information.
- The technician needs to know what to do with the information.
- **This requires knowledge:**
  - How does the system operate.
    - Engine, ABS, Transmission, Emissions, Lights and anything else that has a connection with ECM's, PCM's and various controllers found in todays vehicles.

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Scan Tool Usage

Benefits of a scan tool.

- Provide data from different makes of vehicles (OEM's).
- Step by step instructions on diagnostics and repair of various systems (scan tool dependent).
- Options such as graphing, recording and bi-directional capabilities of certain systems and components.
- Gathering and displaying information that can be beneficial to fleets, owners etc., such as fuel usage, fuel economy and other trip information.

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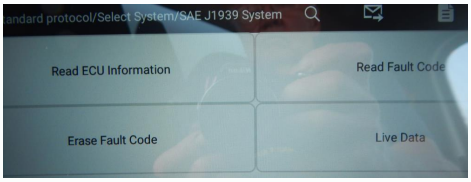
How Computers "Think"



The Scan Tool as Interpreter

Our dialog with the vehicle computer begins when we use the scan tool to enter a request for data. We may ask for information about fault codes, or about the current state of engine sensors. The computer responds to our request and sends back a string of coded voltage pulses representing data. The scan tool converts data from the vehicle computer into words and measurements and displays them on the scan tool display screen. The scan tool is the middleman—the interpreter—in our communication with the computer.

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Scan Tool Usage

Manufacturers are constantly increasing the functionality of scan tools.

- **A single scan tool can cover multiple makes, models and systems.**
- **This enables faster diagnostics.**
- **Portability via laptops and tablets have enabled mobility usage (drive and scan).**

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Scan Tool Usage

A perfect use of this is "Forced Regeneration"

- **This action is typically performed away from buildings, and it can often take half an hour or more to perform. This regulated emissions system requires a scan tool due to the requirements related to strict codes and procedures to clear the codes and clearing (resetting) derates as an example.**
- **If you are a big shop, you might need several scan-tools due to the length of time that a scan-tool is tied up performing these actions on a vehicle.**
- **That is why there are so many options for scan tools and prices.**

"The trick is to know your scan tools capabilities"

Scan Tool Considerations (purchases)

The next question is: "What should I look for in a scan tool"?

The options are limitless out there for different needs.

- **Realistically it is also what you can afford. BUT;**
- **You need to also ask yourself, "what do I want to know, when I hook up to the vehicle".**
- **Putting those two thoughts together means getting the best bang for your buck.**

Scan Tool Considerations (purchases)

Regardless of affordability, you need to at a minimum consider:

- Reliability
- Coverage
- Software and hardware (ideally marry those two together).

Note: This is a shop environment requiring a rugged laptop or tablet.

- Ideally look for one that can work on maximum makes and models.
- Purchase from a reputable source that has good support.
- User friendly is also important, so regardless of skill level, everyone can at a minimum navigate through the tool.

Electronic Service Tools (ESTs)

Before we continue our journey, let's look at different options of connecting to a vehicle's Electrical/Electronic system.

An electronic service tool (EST) is used to perform the following:

- View system identification data
- Access active codes and history codes
- Erase (clear) inactive (history) codes
- View data
- Perform bi-directional tasks (diagnostic tests) on various subcomponents
- Snapshot function
- Reprogram customer data parameters on engine and chassis systems
- Enable updates

Note: There are also "read-only" scan-tools. Usually, the smaller hand-held type with minimal command keys to display fault codes and system status. Usually used to service vehicles and not necessarily repair vehicles.

➢ **The test tool (scan tool) must locate the messages and convert them to useful data.**

- A typical tester is connected to a device called a **"Vehicle Communication Interface" (VCI).**
- The VCI acts as a converter between the external interface of the tester and the diagnostic link connector (DLC).

Note: An example of the external interface of the tester is a USB connector. It could also be Bluetooth, Ethernet or WiFi.

USB

VCI

Trailer ABS VCI

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Non-VCI

CanDo Heavy Duty Pro III

Non –VCI. Cables have OBD 16 pin to allow tablet internally convert/request to communicate.

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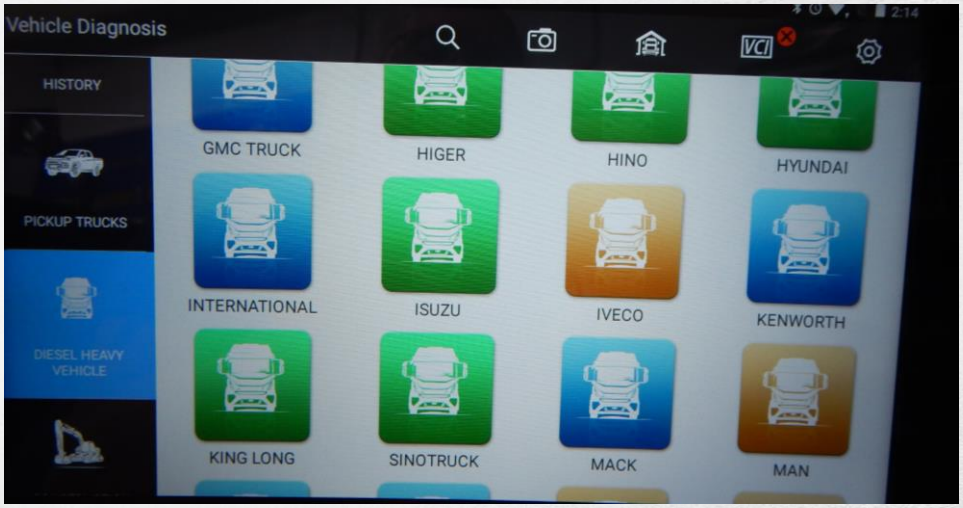
CanDo HD Pro TabII

This and the following slides show why so many cables are included with the CanDo Scan Tool.

Note: This is just part of the Diesel Vehicle list.



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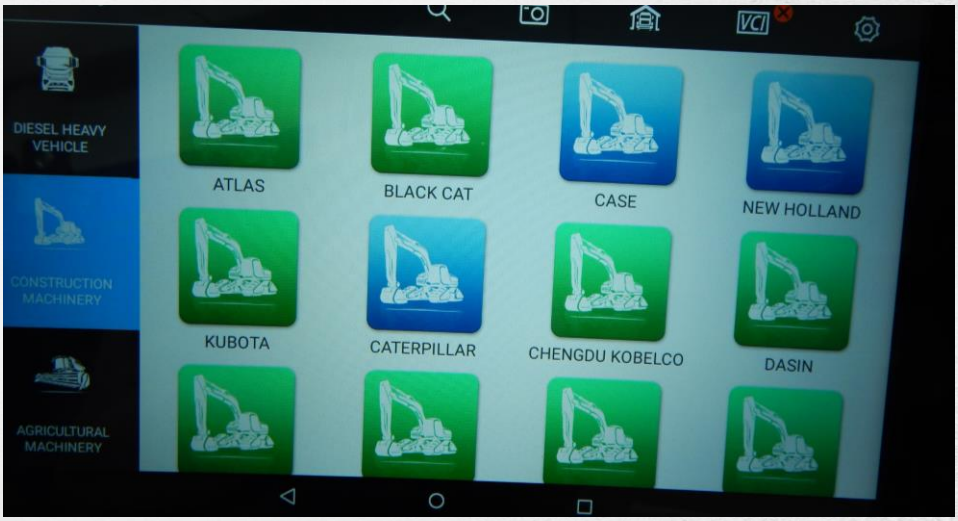
CanDo HD Pro TabII

Partial list due to cropping to fit screen.

Construction Machinery.



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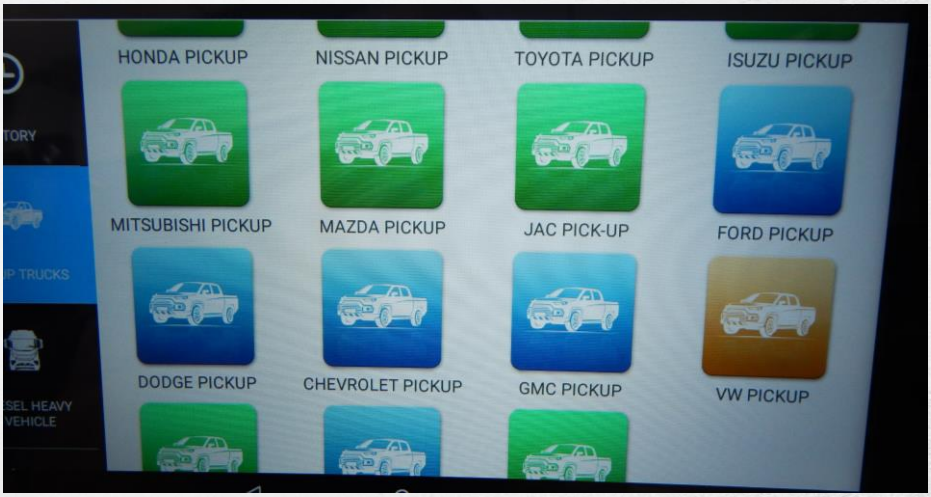
CanDo HD Pro TabII

Agricultural Machinery

CanDo HD Pro TabII

Pickup Trucks



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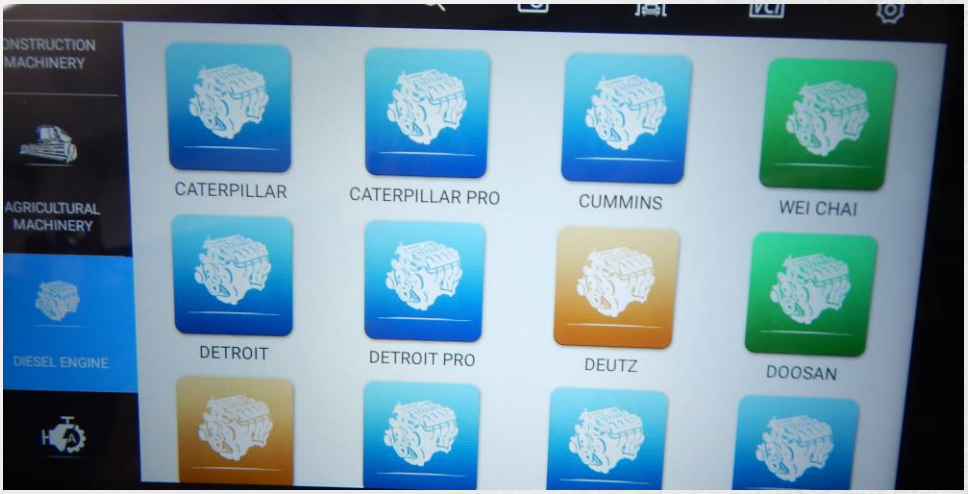
Diesel Engines.



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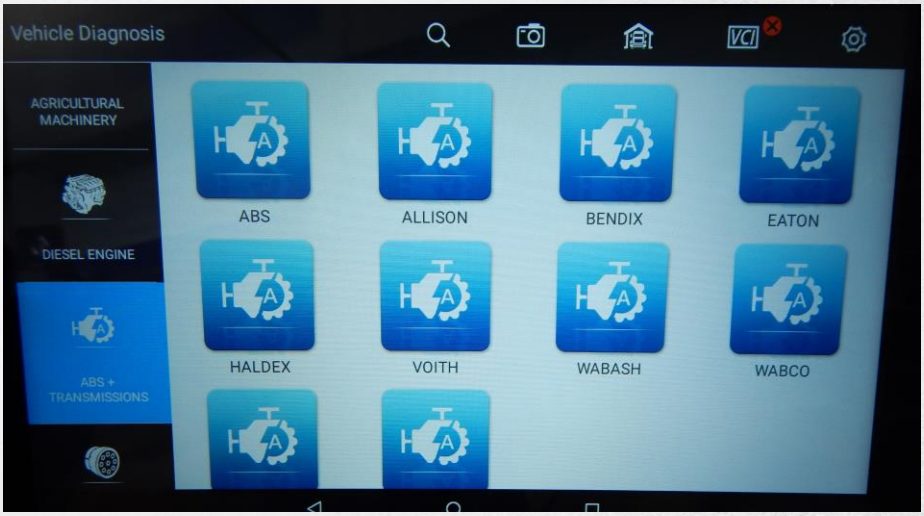
ABS and Transmissions.



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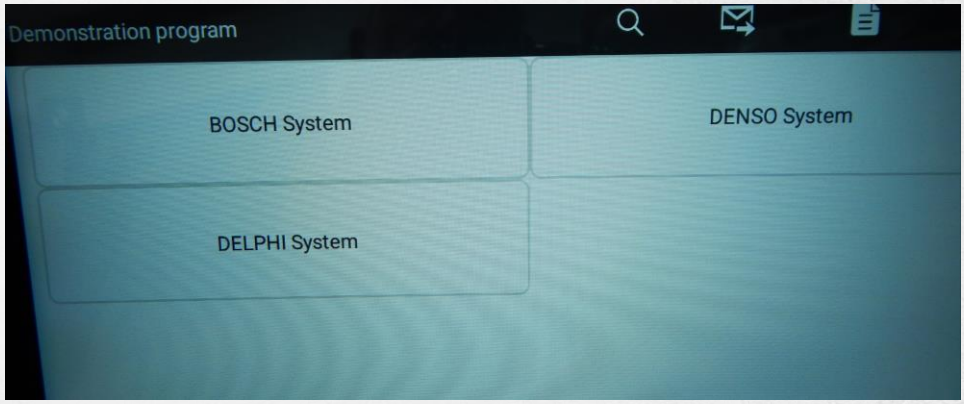
CanDo HD Pro TabII

Even specific major fuel systems.



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Non-VCI Bluetooth Adaptor

CanDo HD Pro Tab

Wireless Adaptor

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CanDo Wireless Hook-Up

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Connecting Service Tool

Connecting the service tool

- Initializing process permits the chassis electronic system to communicate with the EST (scan tool).
- The first information usually displayed will be the system software identification, which identifies the chassis system.

Once the application has finished loading, the typical tool allows options such as:

- Reading fault codes.
- Monitor various parameters.
- Diagnostic (bi-directional) tools.
- Customer programming.

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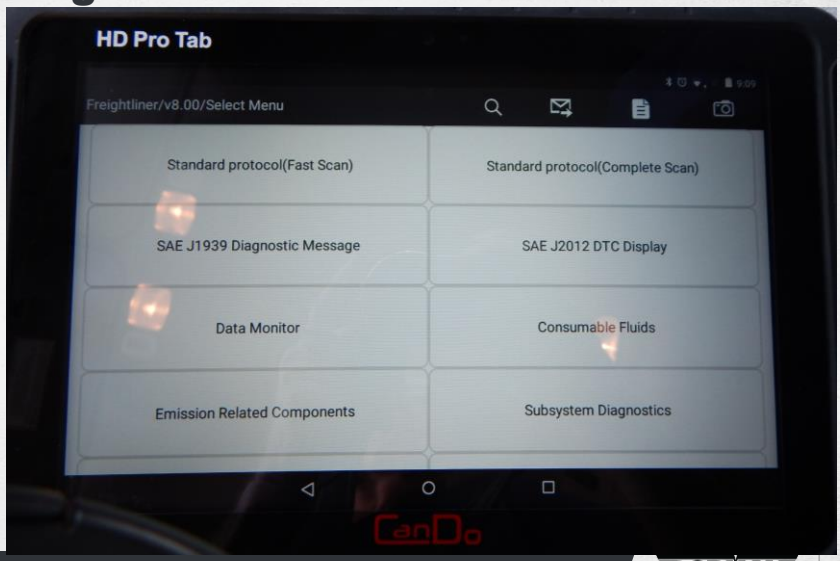
Connecting Service Tool

CanDo
HD Pro Tab



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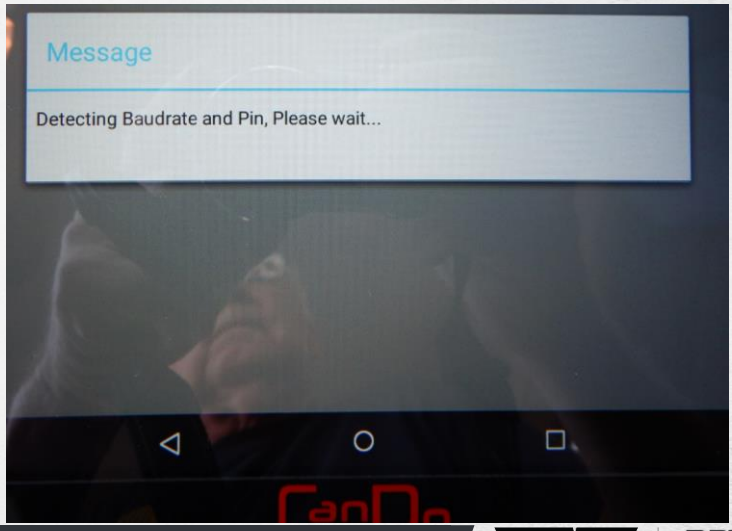
Connecting Service Tool

CanDo
HD Pro Tab



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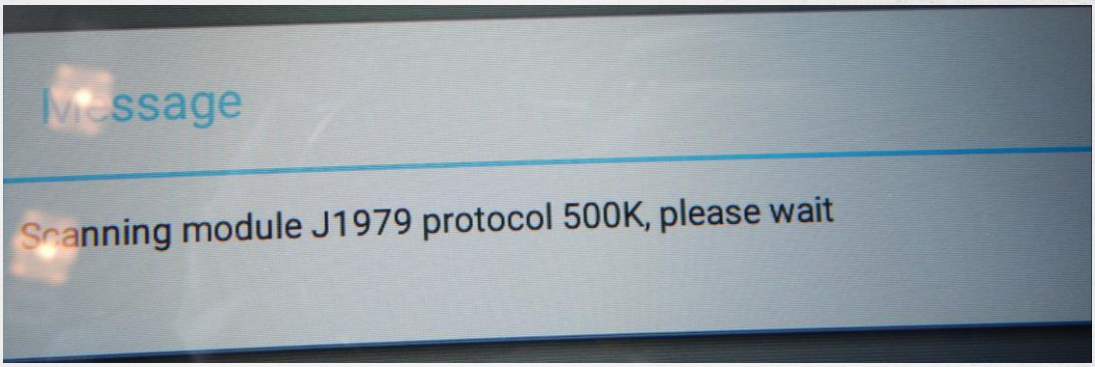
Connecting Service Tool

CanDo HD Pro Tab

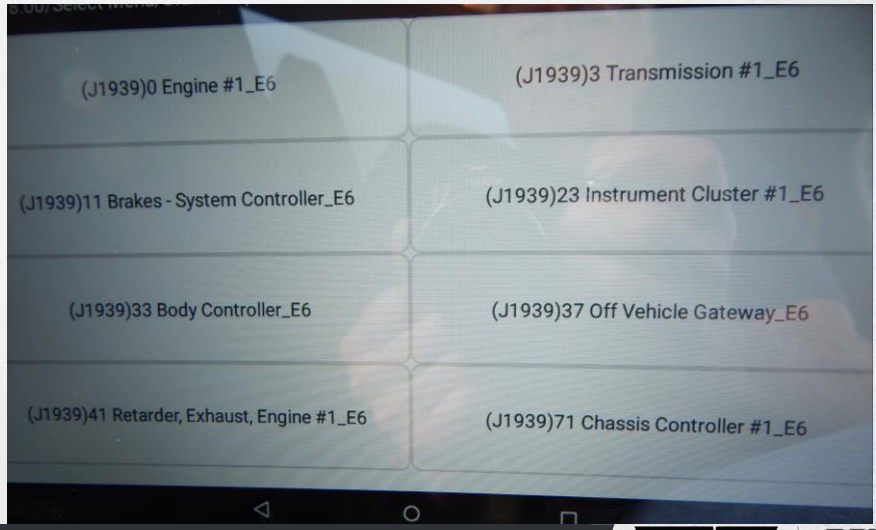


J1979 protocol is a standard that defines how external diagnostic devices and vehicles can communicate to read On-Board Diagnostics (OBD) data, particularly related to emissions.

Connecting Service Tool

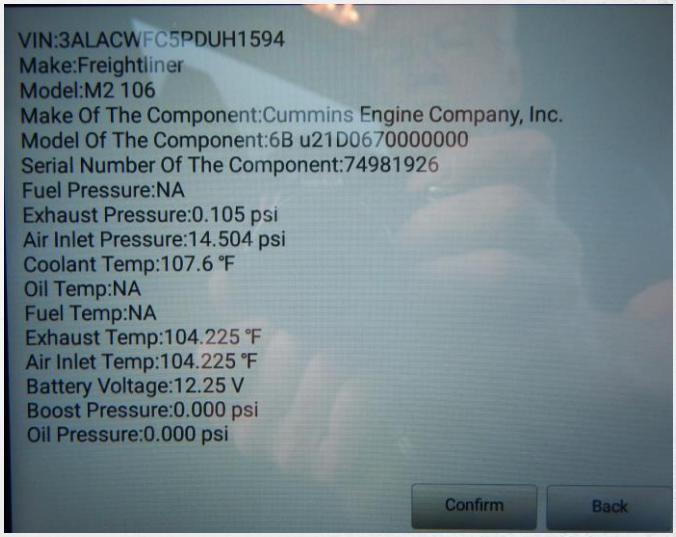
CanDo
HD Pro

Revisit previous lunch and learns relating to OBD for J1939 explanations.



Connecting Service Tool

CanDo
HD Pro



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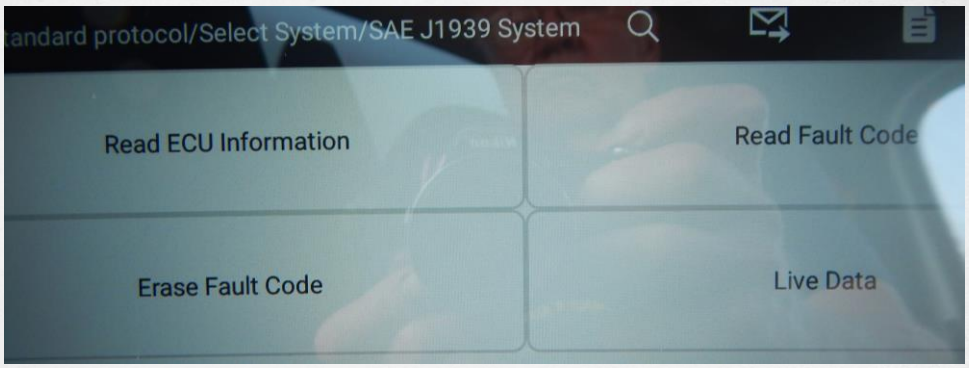
Connecting Service Tool



CanDo HD Pro

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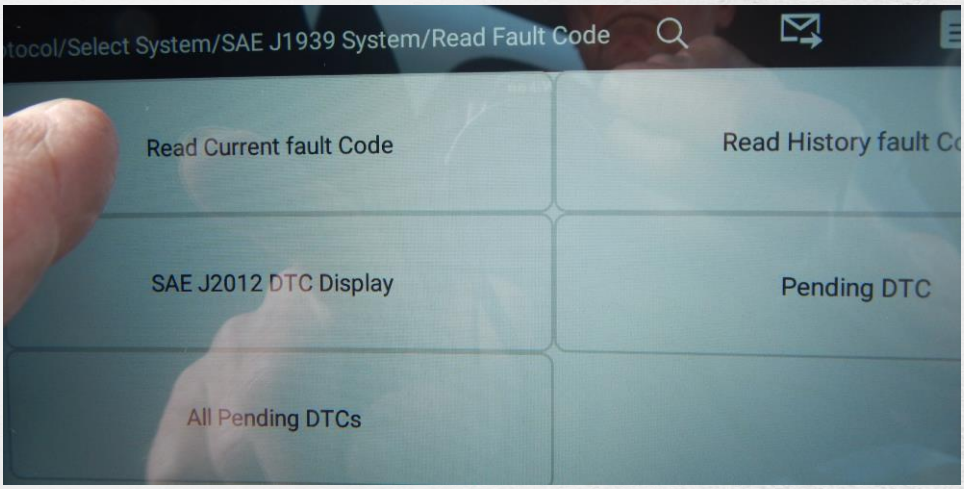
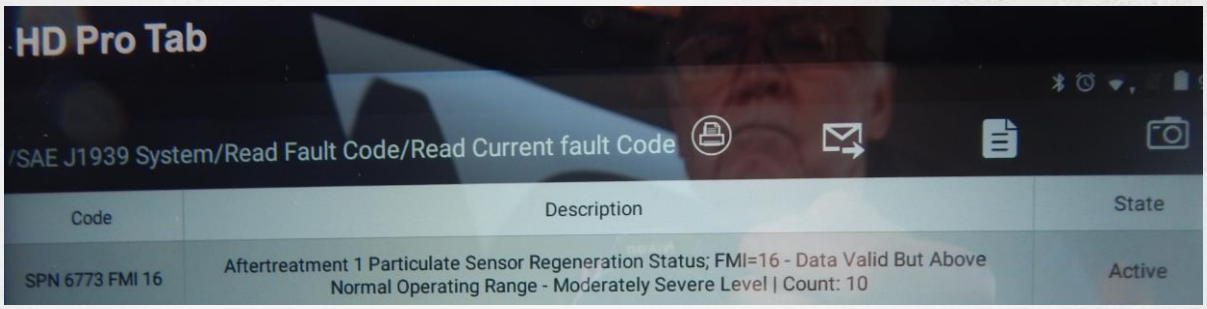
Connecting Service Tool

CanDo
HD Pro

SAE J2012 is often used for decoding enhanced DTCs and specifies the ranges reserved for vehicle manufacturer specific usage.



Connecting Service Tool



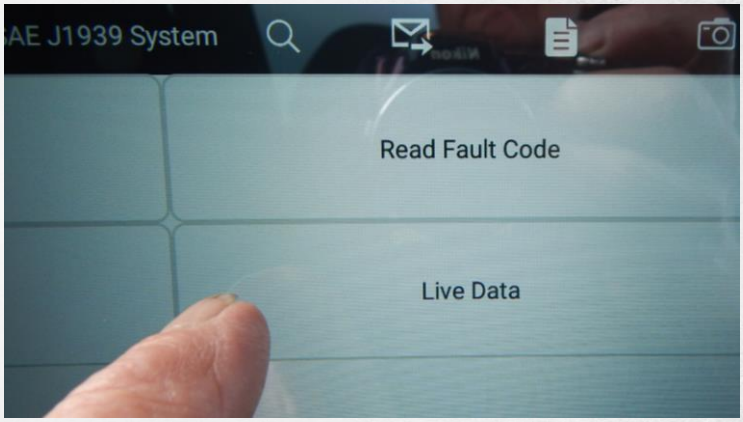
Emissions related codes tend to be on top of the hit list on today's vehicles.

CanDo HD Pro

Connecting Service Tool

CanDo
HD Pro

Chances are pretty good that this is one of the first requests after reading the codes. Live data is a window into the operation of the engine.



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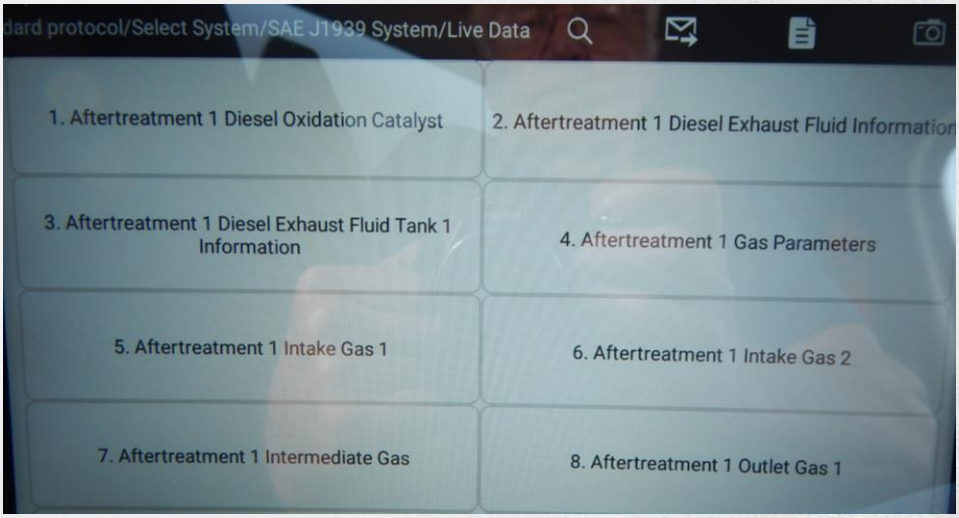
Connecting Service Tool

CanDo
HD Pro

Massive amounts of data are related to emissions systems and components.



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Connecting Service Tool

CanDo

HD Pro

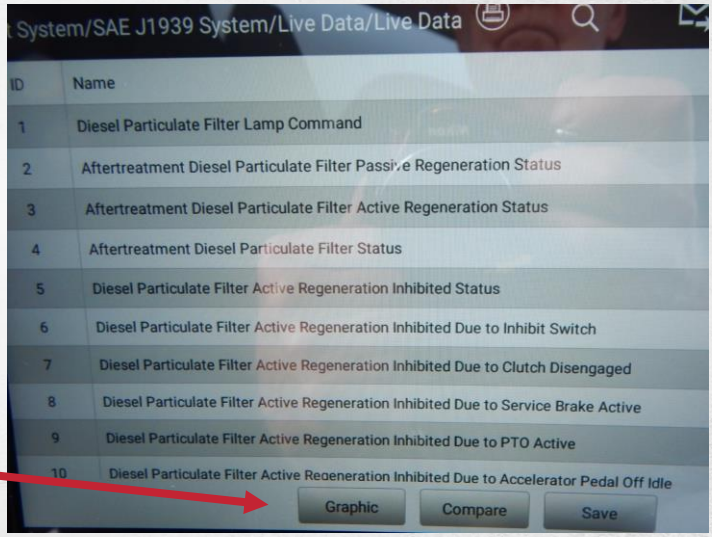
What do you want to know?

What do you want to see?

Do you know how emissions systems work?

A good scan tool can help and guide you.

Note the Graphic button.



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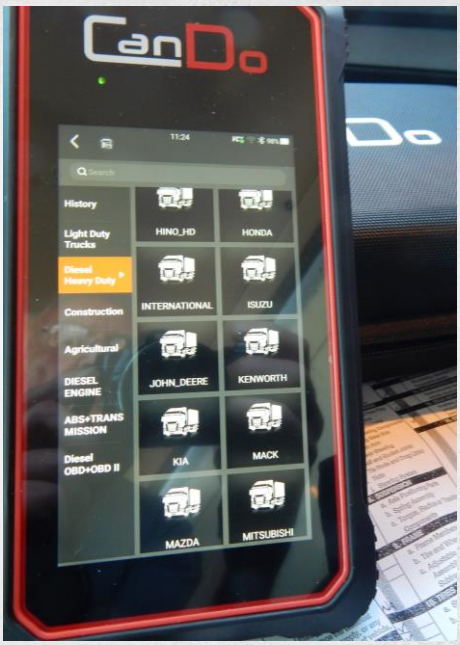
CanDo HD Code Reader



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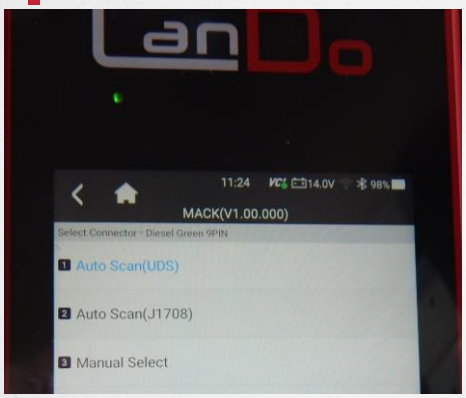
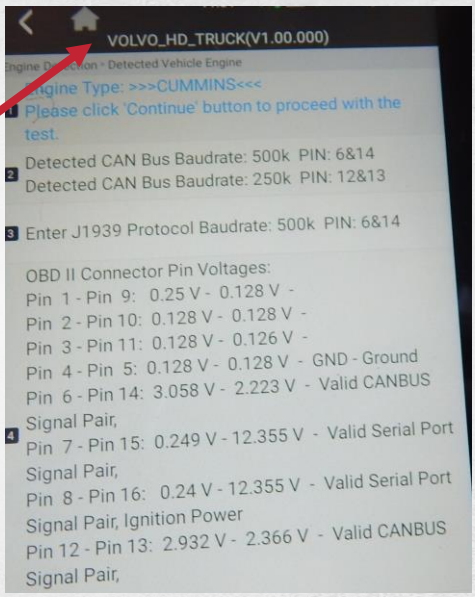
CanDo HD Code Reader



VOLVO

CUMMINS Engine.



Would not detect under Mack.
Selected Volvo and it auto detected immediately.
I'm thinking it's a Mack/Volvo thing.

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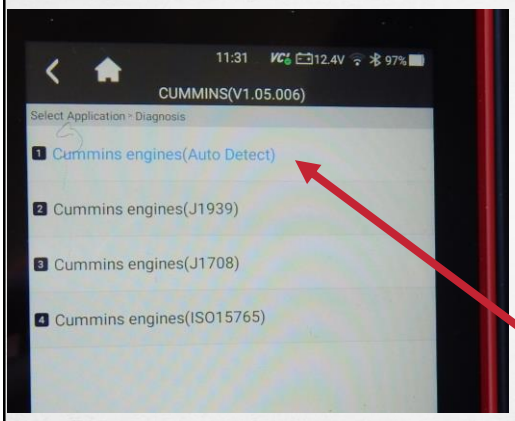
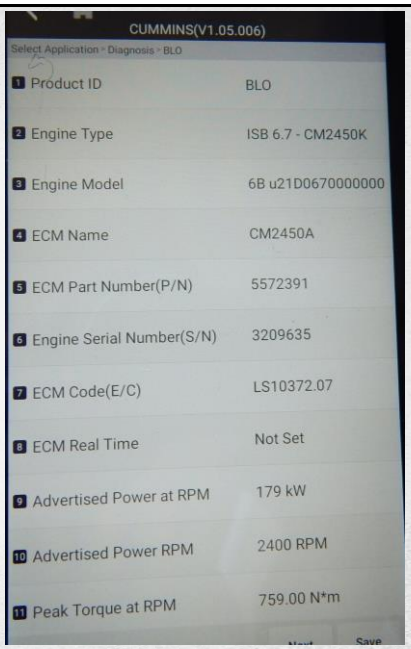
CanDo HD Code Reader



One click of the button, and you have everything you want to know about the engine.

Auto Detect.



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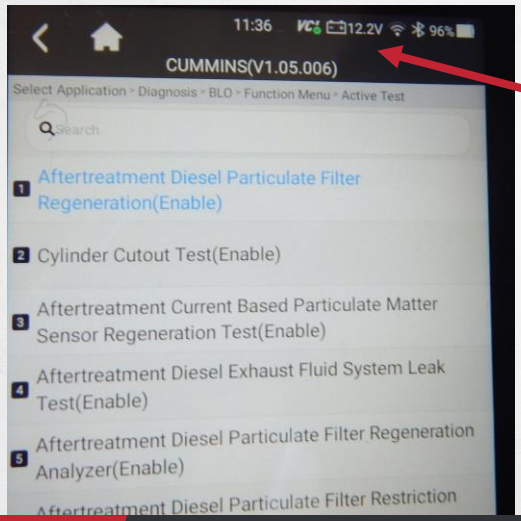
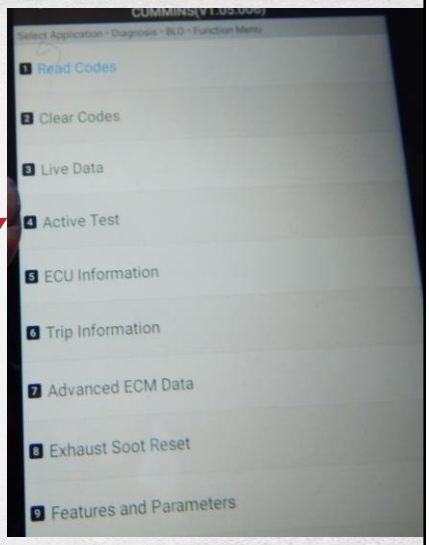


VCI VOLTS: 12.2

Active Test

Active test capabilities is very important for repairing today's vehicles.



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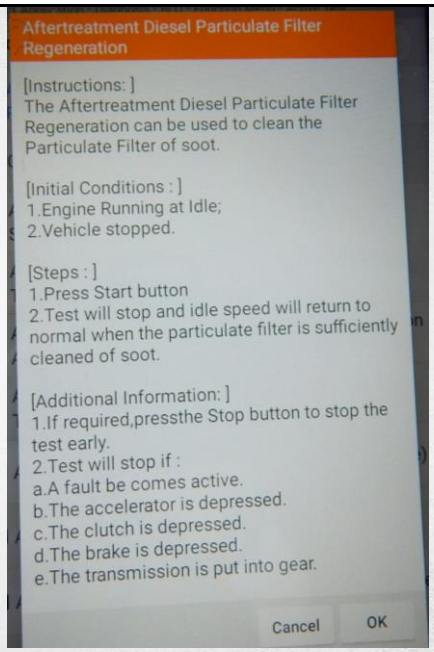
CanDo HD Code Reader

RTFI.

These instructions are a good reminder if you are experienced or very important if this is your first time doing a forced regeneration.



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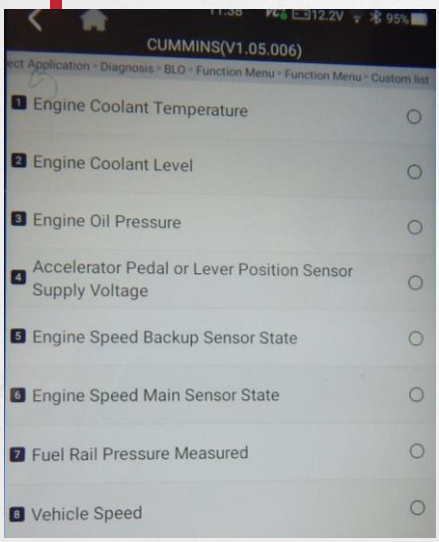
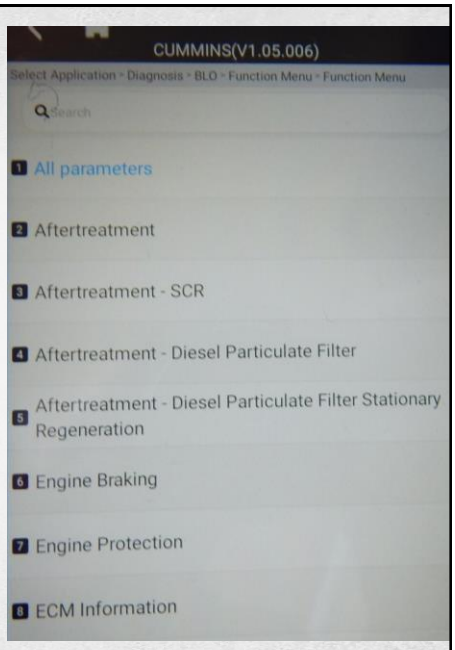
CanDo HD Code Reader



This is a **function menu** to pick and choose areas that you want to focus on dependent upon the code or issues.

Notice how many sub functions are related to aftertreatment.



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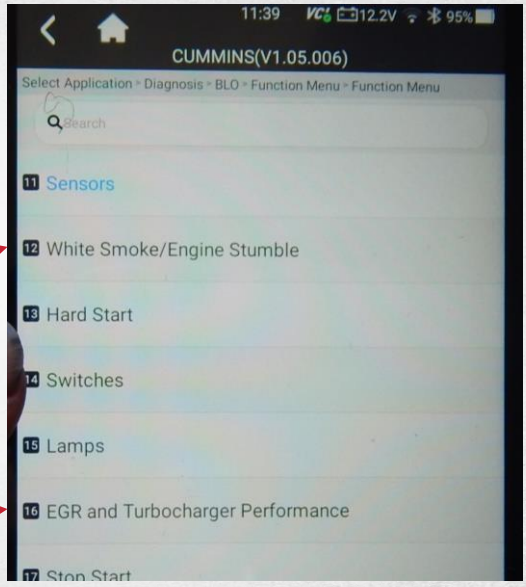
CanDo HD Code Reader

More function menu.

White Smoke/Engine Stumble

Hard Start

EGR and Turbocharger Performance



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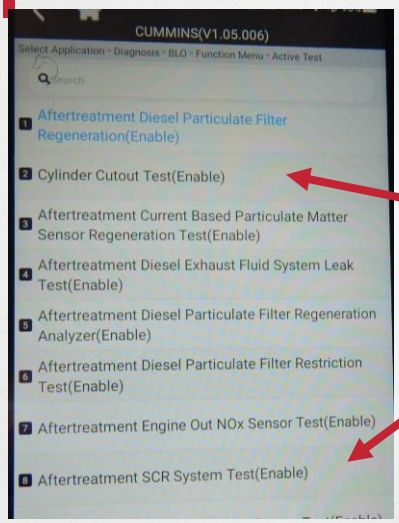


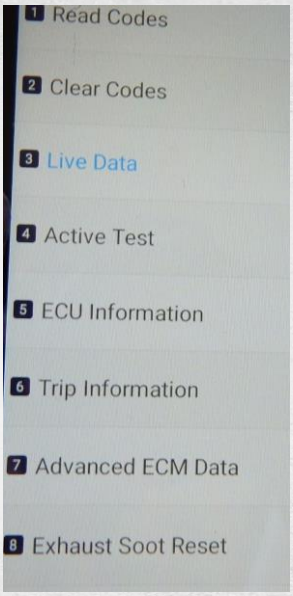
Some more pick and choose

Active Test

Cylinder Cutout Test

SCR System Test

I find it very user friendly.



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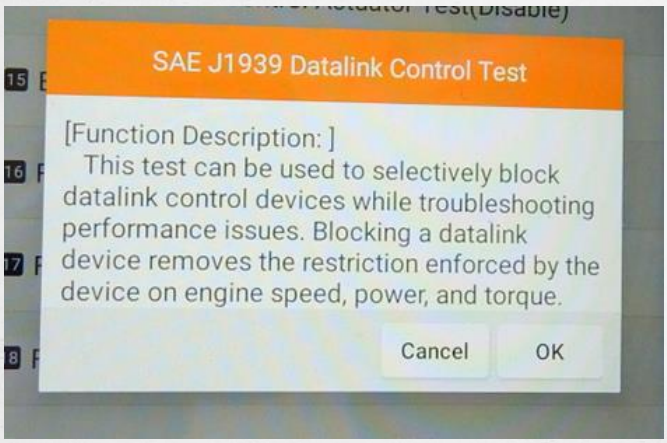
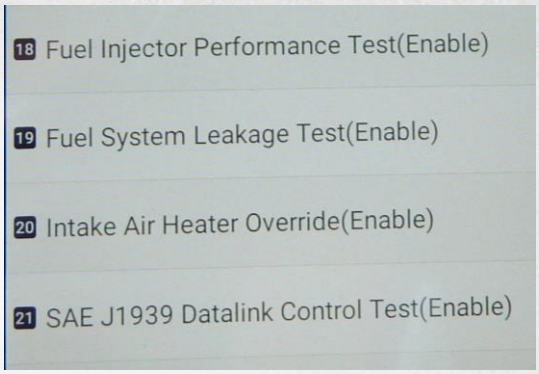
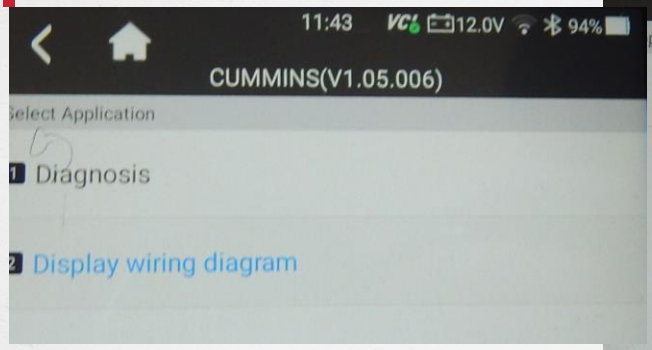


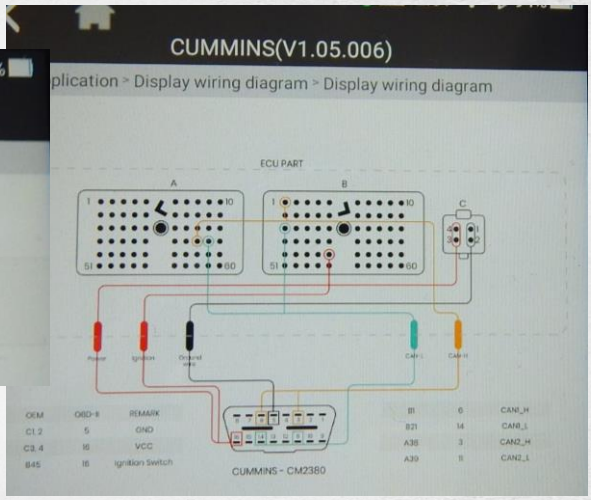


Another one of many tests that can be performed.

See previous lunch and learns pertaining to multiplexing and CAN

CanDo HD Code Reader





Another great Feature.
"Display Wiring Diagram"

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Live Demo using CanDo HD Pro Tab

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SCR Issues and Diagnosing DEF

Suspecting DEF issues creating derate etc.
Question: Can your scan tool do a good enough of a job, verifying and perform bi-directional testing?

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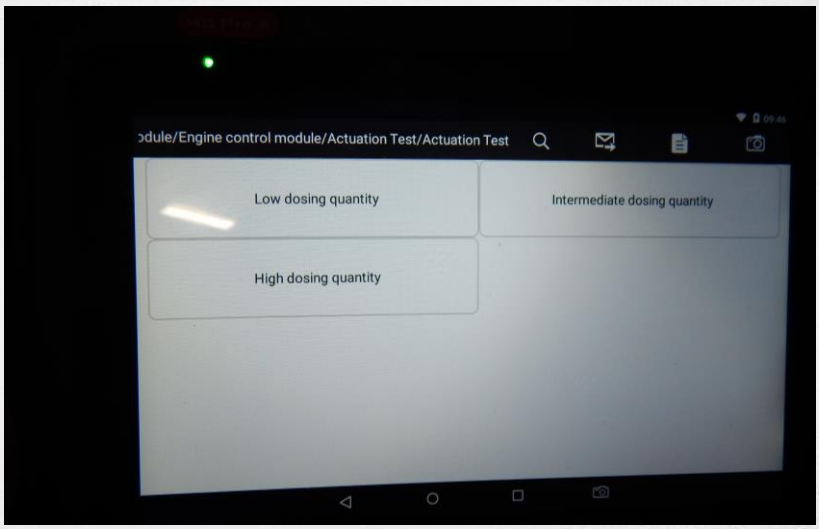
CanDo Scan tool actuation test.



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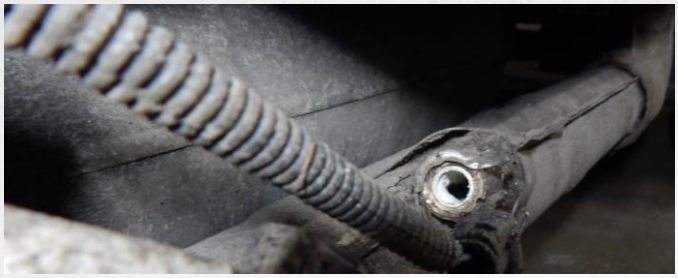
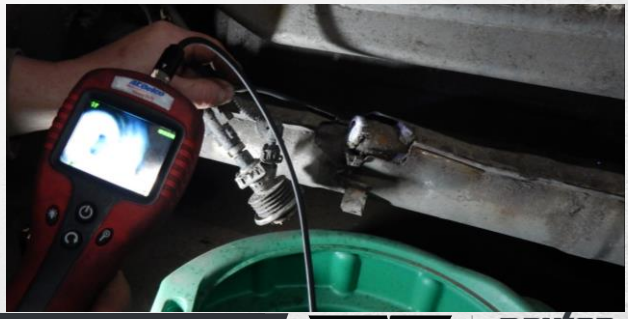


This is the real world.



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Questions?

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