

# MDT 10 Operators Manual



# ET7200



# **A** WARNING

To reduce the risk of injury, read and understand these safety warnings and instructions before using the tool. Keep these instructions with the tool for future reference. If you have any questions, contact your **MAC TOOLS** representative or distributor.

Scan Tool

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## INTRODUCTION

The **Mac Tools™ MDT 10** is a professional scan tool built into a durable AndroidTM tablet. Up to four hours of battery run time. Extremely fast boot time and Swift On function. Wi-Fi and web browser allow full internet access. Built-in training videos to learn scan tool and vehicle test procedures. AutoDetectTM alerts technician when repair information is available. Auto IDTM. Automatically identifies CAN vehicles to quickly set up year, make, model, and engine. Deep Link In-session to Direct-HitTM for identifix® subscribers. NOTE: Additional safety measures may be required because of your particular application of the tool. Contact your Mac Tools representative or distributor with any questions concerning the tool and its use.

Mac Tools 505 North Cleveland Avenue Suite 200 Westerville, Ohio 43082

## WARRANTY

We warrant that this tool shall be free from manufacturing defects for a period of TWO YEARS from the original purchase date. Our obligation to the original purchaser shall be limited to repairing or replacing, at our expense (not including shipping charges) a defective tool if returned by the original purchaser within two years from the date of purchase, all incoming shipping charges prepaid. THIS WARRANTY DOES NOT COVER DEFECTS OR DAMAGES TO THE TOOL (i) after the warranty period expires; (ii) resulting from misuse or abnormal operation; (iii) resulting from a failure to properly lubricate, maintain or operate the tool; or (iv) resulting from any repair or maintenance services performed by any party other than Mac Tools.

## SAFETY DEFINITIONS

	DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	WARNING indicates a potentially hazardous situation which if not avoided, could result in death or serious injury.
	CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
CAUTION	CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

## SAFETY PRECAUTIONS

BEFORE OPERATING THIS TOOL, ALL OPERATORS SHOULD READ AND UNDERSTAND THIS MANUAL AND FOLLOW ALL SAFETY WARNINGS AND INSTRUCTIONS.

KEEP THESE INSTRUCTIONS WITH THE TOOL FOR FUTURE REFERENCE. IF YOU HAVE ANY QUESTIONS, CONTACT YOUR MAC REPRESENTATIVE OR DISTRIBUTOR.

## A DANGER:

When an engine is operating, keep the service area well ventilated or attach a building exhaust removal system to the engine exhaust system. Engines produce carbon monoxide, an odorless, poisonous gas that causes slower reaction time and can lead to death or serious personal injury.

## WARNING:

- When working with hydraulic or fuel lines, be careful that liquids under pressure do not escape and create a
  dangerous condition. Use adequate ventilation and make sure there are no sparks or possibility of sparks that may
  ignite any vapor.
- Wear an American National Standards Institute (ANSI) Z87.1 approved eye shield when testing or repairing vehicles.
- Objects propelled by whirling engine components or pressurized liquids escaping may cause personal injury.
- Set the parking brake and block the wheels before testing or repairing a vehicle. It is especially important to block
  the wheels on front-wheel drive vehicles because the parking brake does not hold the drive wheels.
- Do not drive the vehicle and operate the software at the same time. Any distractions may cause an accident. Have one person operate the software as another person drives the vehicle.
- · Maintain adequate clearance around moving components or belts during testing.
- Moving components and belts can catch loose clothing, body parts, or test equipment and cause serious personal injury or tool damage.
- Automotive batteries contain sulfuric acid and produce explosive gases that can result in serious injury ignition of
  gases, keep lit cigarettes, sparks, flames, and other ignition sources away from the battery at all times.
- Refer to the service manual for the vehicle being serviced. Adhere to all diagnostic procedures and precautions Failure to do so could result in personal injury or otherwise unneeded repairs.
- Use only specially designed replacement parts (brake hoses and lines) for ABS equipped vehicles.

- After bleeding the brake system, check the brake pedal for excessive travel or a "spongy" feel. Bleed again if
  either condition is present.
- When installing transmitting devices (Citizen Band radio, telephone, etc) on ABS-equipped vehicles, do not locate the antenna near the ABS control unit or any other control unit.
- 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 and radiates radio frequency energy and, if not installed and used in
  accordance with the instructions, may cause harmful interference to radio communications.
- To reduce risk of injury, charge only Mac Tools rechargeable batteries for the handset product with the supplied charger. Other types of batteries may burst causing injury to persons and damage.
- Use of an attachment not recommended or sold by the battery charger manufacturer may result in fire, electric shock, or personal injury.
- · Do not operate the tool with a damaged cord or connector. Replace damaged cords and connectors immediately.
- Do not operate the charger if it has received a sharp blow, been dropped, or otherwise damaged in any way. Take the charger to a qualified service person.
- Do not disassemble the charger. Take the charger to a qualified service person if service or repair is necessary. Incorrect reassembly may result in electric shock or fire Unplug charger before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.
- To prevent possible hearing damage, avoid using the tool at high volume levels for long periods.
- Do not expose tool or charger to rain, moisture, or snow.
- Verify that cords are located where they will not be stepped on, tripped over, or otherwise become a safety hazard
  or subjected to damage or stress.
- Use only batteries that are approved for use with this tool. Use of other types may increase the risk of fire or explosion.
- Do not carry a battery in your pocket, purse, or other container where metal objects (such as car keys or paper clips) could short-circuit the battery terminals. The resulting excessive current flow can cause extremely high temperatures and may result in damage to the battery pack or cause fire or burns.
- The battery poses a burn hazard if you handle it improperly. Do not disassemble it. Handle a damaged or leaking
  battery with extreme care. If the battery is damaged, electrolyte may leak from the cells and may cause personal
  injury.
- Keep the battery away from children.
- Do not store or leave your tool or battery near a heat source such as a radiator, replace, stove, electric heater, or other heat-generating appliance or otherwise expose it to temperatures in excess of 60°C (140°F). When heated to excessive temperatures, battery cells could explode or vent, causing personal injury or risk of fire.
- Do not dispose of your tool's battery in a fire or with normal household waste. Battery cells may explode. Discard a
  used battery according to the manufacturer's instructions or contact your local waste disposal agency for disposal
  instructions. Dispose of a spent or damaged battery promptly.

#### CAUTION:

- To avoid damage or generation of false data, make sure the vehicle battery is fully charged and the connection to the vehicle Data Link Connector (DLC) is clean and secure.
- Do not place the tool on the distributor of a vehicle. Strong electromagnetic interference can damage the tool.
- Never disconnect or reconnect any electrical connector while the ignition is on. Powertrain Control Module (PCM) damage may result.

## **GENERAL INFORMATION**

## Introduction



**Handset Front** 

#### 1. Vehicle Identification Window

• Where vehicle selections can be made and modified.

#### 2. Camera

• Front facing camera is 5MP.

#### 3. Microphone

• Front facing microphone.

#### 4. Ambient Light Sensor

#### 5. Home Screen Functions

- Read DTCs allows reading, clearing, and printing of vehicle DTCs.
- Data Stream shows live sensor and solenoid data streaming from the vehicle ECU.
- Special Tests Available dependent upon the vehicle and controller selected.
- Diagnostic Information provides diagnostic, repair, and reset information for the selected vehicle.
- Maintenance Tests common scan resets after vehicle service.
- All System DTC Scan will scan all available controllers on the selected vehicle for DTCs.
- Browser Fast Touch<sup>™</sup> sites and internet.
- Settings change settings of the tool.
- Automated System Test is a comprehensive vehicle scan containing all DTCs on the vehicle and available OBDII Data.
- View Saved Tests allows the user to view previously ran and saved DTC reads, All System DTC scan, and Automated System Test scans.
- View Data Stream Recordings allows the user to view previously saved data stream recordings.

System Wiring Diagrams provides OEM specific, Full color, Full system diagrams.

#### 6. Android Applications Button

• Displays the Apps screen.

#### 7. Camera Button

- Opens the camera application.
- 8. Screen Shot Button
  - Press to take a picture of the current screen.
- 9. VCI Connection Manager Button
  - Opens the VCI Manager.
- 10. Recent apps button
  - Opens a list of thumbnail images of currently running apps.
- 11. Home Button

.

- Displays the central home screen.
- 12. Back Button
  - Returns to the previous screen or option.

## Handset

The handset is a ruggedized touchscreen tablet equipped with the Android operating system. The power button is located on the top right of the Handset next to the connector panel.

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## **Handset Power Button**

#### **Power Button Functions**

The power button has four functions

- a. ON: Press the power button to turn the handset on.
- b. OFF: Press and release the power button. A pop up window will appear to shut down the handset.
- c. ON: If the screen times out or is in standby mode, press and release the power button to wake up the handset. Turn ON: With tool off, press to turn ON
- d. OFF: Press the power button and hold for 5 seconds to turn the handset off completely (not recommended).

## Handset Ports



- 1. Mini USB
- 2. VCI Port
- 3. Ethernet Connector
- 4. Audio port
- 5. USB Type "A" port
- 6. HDMI Port
- 7. Power port
- 8. Power Button
- 9. Speakers
- 10. Docking Station Port

## Handset Back



## 1. Light

- The light has two functions
- Camera Flash mode
- Flash Light mode

#### 2. Camera

• Rear Facing Camera is 5MP.

## 3. Microphone

Rear Facing Microphone.

## Vehicle Communication Interface (VCI)

The Vehicle Communication Interface (VCI) translates vehicle diagnostic data link information for the handset using Wi-Fi wireless technology or a linked cable. The wireless capability of the tool is designed to communicate with the VCI when it is within a range of roughly 30 feet, even though it is possible to go farther. Every shop has different noise that can interfere and hamper the distance of a wireless network. Some types of noise include cordless phones, certain lighting, other wireless networks in the area, and other signals.



- 1. Power port (used when necessary)
- 2. DLC/OBDII cable port
- 3. Power
  - Indicates the VCI has received power.
- 4. PC Connection
  - Indicates the VCI is communicating with the PC.
- 5. Vehicle Connection
  - Indicates the VCI is communicating with vehicle by wireless Wi-Fi or USB
- 6. USB "B" Port

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## **TPMS Tire Pressure Reset (TPR) Tool**

The Tire Pressure Reset (TPR) is a fast, simple, easy-touse TPMS activation tool that can be used with the handset or as a stand-alone tool. It works on vehicle TPMS sensors and automatically adjusts activation output power to eliminate cross-activation of near sensors.



## Software Descriptions

#### Handset Software

The handset comes with the diagnostic software pre-loaded. Set up Docking Station, attach power supply provided with kit and charge battery before use.

The first time the handset is powered up, the user needs to accept the license agreement and review opportunities to provide input that will help improve the handset. Then, the user will have three choices:

- Register Now: Unlocks all functions of handset.
- Trial mode: Unlocks all functions for 30 days.
- Demo Mode: Displays what functions may look like.

Periodically, updates will become available and the user will be notified by an icon on the screen. To update the handset, there must be Wi-Fi or Ethernet connection available.

#### **Software Applications Overview**

The handset allows users to diagnose problems on a wide variety of vehicles (from electric to heavy duty vehicles). Users are able to perform common service procedures, maintenance tests, and special tests to find deficiencies with vehicle systems or components.

#### 800.MACTOOLS

The handset will display DTCs from OBDI or OBDII systems. Real-time sensor data can be viewed in data stream mode. The user can also obtain diagnostic information regarding repairs.

With the purchase of the Tech-Scope, the user is able to test sensors and systems for proper function. Browser mode allows the user to connect to the internet to find websites that may help with the repair of the vehicle. The handset comes with wireless communication for ease of use and on-screen help when desired.

## **SETUP**

## **Docking Station**



**Docking Station** 

## 1. Handset

#### 2. Docking Station

#### 3. LED

The Docking Station can be used to store the Handset when not in use. The Docking station can also charge the handset.

There is a storage bin at the rear of the Docking Station to store the VCI/OBD-II Cable when the handset is charging.

The LED state shall be as follows:

- · Off indicates no power connected
- · Green flashing indicates charging handset
- · Green steady indicates charged handset

Note: LED shall flash momentarily even if the handset is completely charged when the handset is first attached to the charging station to indicate contact has been made.

## **Battery Charging**

Connect the handset to AC power and fully charge the battery.

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#### 1. Handset

#### 2. AC Power cord

When the handset is turned on, the level of battery charge is indicated in the upper right corner of the screen. *NOTE: The tool can be used while charging. The battery can also be charged using the 18 volt power supply provided with the kit.* 

## Using the handset

There are three options for use.

- Register Now: It is recommended to register for full functionality of tool and tech support.
- Trial Mode: This allows use of the handset for 30 days before it must be registered. If the 30 day trial period is over before it is registered, the handset functions will be locked out. At that time, registered mode or demo mode will need to be entered.
- Demo Mode: This mode demonstrates the functions by displaying random data. ss02585



1. Press the power button to turn on the handset.

#### 800.MACTOOLS



2. Select a language.

## REGISTRATION

It is important to register the handset right away. To register, it will need a Wi-Fi internet connection. To connect to Wi-Fi, refer to steps 2 through 6. Register now enables the unit. Register later causes the device to go into a 30-day trial mode. Demo Mode is for training and demonstration purposes only, it cannot communicate with a vehicle. Demo Mode will use sample data.

- 1. Select Register my Device Now.
- 2. Read and accept the user agreement.

ss02387		
You've got the r	ight tool!	
Register my Device Now	Quick Setup	End User License Agreement
Register my Device Later	1) Read & agree to the EULA	Software Product License Agreement Copyright (c) 2014-2015, Bosch Automotive Service Solutions Inc. All Rights Reserved
Demo Mode	2) Setup Wi-Fi.	SOFTWARE PRODUCT LICENSE AGREEMENT
	3) Activate your warranty	IMPORTANT: Do not continue unit you have read this Software Product License Agreement ("Agreement"). By clicking the I Accept button (or authoring any other person to do so), you accept this Agreement and are bound by its lemms. If you are not sure that you are package to a projection of the proceeding. This Agreement is a legally binding document setting forth the manner by which you may use the Bosh Automotive Service Solutions Inc. ("Bosh") software, and any associated media, printed materials and electronic terms and conditions of the Agreement before using Dis Software Product. Use of this Software product indicates your acceptance of the following terms and conditions.
		<ol> <li>OWNERSHIP. The Software Product is licensed (not sold) to you. The Software Product shall remain the property of Bosch. Bosch</li> </ol>
		IAgree

Note: Wi-Fi Must be ON. If Wi-Fi is OFF slide the Wi-Fi switch to the ON position and follow the prompts on the screen.

ss02388		
You've got the righ	t tool!	
Register my Device Now Register my Device Later Demo Mode	Setup Wi-Fi Add Wi-Fi Network This is needed for retinents that do not breakdast their SSID	
	Wi-Fi is not enabled Please enable Wi-Fi	
	OK S	
	WR DEE	Next Your Name

3. Enable Wi-Fi and select Next

ss02389	
You've got the rig	ght tool!
Register my Device Now	Setup Wi-Fi Add Wi-Fi Network
Register my Device Later Demo Mode	This is needed for networks that do not broadcast their SSID
	Wi Fi OFF Next: Your Name

4. Select a network and select Next

ss02390		
You've got the rig	iht tool!	
Register my Device Now	Setup Wi-Fi	
Register my Device Later	Shop Secured with WP42	¢
Demo Mode	Office Secured with WPA2	((:
	Add Wi-Fi Network	
	Wi-Fi ON Next: Your Nam	ne

5. If a Network password is required the Android Wi-Fi screen will be displayed. Follow the prompts on the screen.

	Sele	t Wi-Fi	8
On			9
	8	Shop Connetted	
	7	Office Saved	
BACK			NEXT

6. If an internet connection could not be established, follow the prompts on the screen and try again.

5502392		
You've got the rig	ght tool!	
Register my Device Now	Setup Wi-Fi	
Registering bevice now	Shop	ŕ
Register my Device Later	Secured with WPA2	
Demo Mode	Office	Ŷ
	Secured with WPA2	
	Internet Sync Required	
	Could not establish connection. Please ensure connection to Internet is stable and try again!	
	ок	
	W-Fi ON	Next: Your Name

7. Enter your Name . Follow the prompts on the screen to activate warranty.

ss02393	
You've got the rig	ght tool!
Register my Device Now	Activate Warranty
Register my Device Later	John
Demo Mode	Smith
	City Service Center
	City Service Center
	Set Clock Next: Contact Info

8. Enter contact information. Follow the prompts on the screen.

egister my Device Now	Active Wa	Active Warranty cityshop@gmail.com		
egister my Device Later	3135551234			
lemo Mode	1234 Main St.			
	Address 2 (op	tional)		
	Detroit	М	492032	
	United States	_		

9. Confirm information. Follow the prompts on the screen.

ss02395	
You've got the righ	nt tool!
Register my Device Now	Active Warranty
Register my Device Later	John
Demo Mode	City Service Center City Service Center 17/2016 citystop@gmail.com 313551224 1234 Main St. Detroit, MI 48202 United States

10. MDT 10 is ready to use.

ss02396		
e Active O	Esearch Google for	<b>₹⊿</b> 2:59
No Vehicle Selected	Read DTCs     Data Stream     Special Tests     Diagnostic Information       Maintenance Tests     Image: All System DTC Scan     Browser     Settings	
OBD-II	Automated System Test Veiw Saved Tests Veiw Case Tests System Wring Diagrams	
Select Vehicle	Tue, 10 May 2016	
	d o 🗆 🚺 🔯	0.

## 30 Day Trial

1. Select Register my Device Later for 30 days of full use of the tool before registration is required. If the handset is not registered within the 30 day trial period, after 30 days it will only function in Demo Mode.



2. MDT 10 is ready to use.



#### Demo

1. Select Demo mode



2. MDT 10 is ready to use.

ss02400 ▼⊿ 🖁 2:59 Demo O Search Google for 1001 101001 0101 **≜** ∔∔† CHECK r Read DTC 0, ŝ All Syst m DTC Scan No Vehicle Selecter 0 OBD-II Tue, 10 May 2016 Select Vehicle 0 0<sup>.</sup>

## **Provide Power to VCI**



**VCI Cable Connections** 

1. VCI

#### 2. OBDII/DLC cable

- 1. Connect the OBDII/DLC cable to the VCI.
- Connect the OBDII/DLC cable to the DLC on vehicle (typically located on the driver's side within 18 inches (45.7 cm) of the steering wheel).
- 3. Turn ignition ON.
  - Power indicator illuminates when the VCI is receiving power.
  - PC connection illuminates when the VCI is connected to handset.
  - Vehicle connection illuminates when the VCI is communicating with the handset and vehicle.



VCI Connected to Vehicle

- 1. OBDII/DLC Cable
- 2. DLC
- 3. VCI

## **Manual Pairing**

The first use will automatically pair.

- 1. Connect the VCI to the vehicle DLC.
- 2. Turn on handset and wait for it to display the home screen.
- 3. Select the VCI Connection Manager icon.

ss02401 ♥⊿ 🛿 2:59 Search Google for Active O 1001 101001 0101 **A** ł CHECK lead DTC 0 X 8 335I (E92/E93) (:::) All System DTC Scan TIRE PRESSURE MONITOR 0 Æ HECK View Data System Wi Diagr OBD-II Select Vehicle Tue, 10 May 2016 0

## **VCI** Connection Manager icon

V	VCI Connection Manager Icon Definitions		
No VCI is paired with the handset.			
VCI is paired on the hardware level, but softwa check had failed. VCI cannot be used without software update.			
	VCI is connected via Wi-Fi. Software check is successful, VCI is ready for use, but Wi-Fi signal is degraded.		
VCI is connected via USB. Software check is successful, VCI is ready for use.			
	VCI is connected via Wi-Fi. Software check is successful, VCI is ready for use.		

- 4. Once VCI Connection Manager icon is selected, VCI Connection Manager dialog is displayed, displaying discovered VCIs. Select Refresh to rediscover available VCIs if needed.
- 5. Select "Connect" next to desired VCI. VCI Connection Manager dialog will refresh to show successful connection.



At this point the icon will change from "No VCI is paired with the handset" to VCI is connected via Wi-Fi The handset is now paired to a VCI. To use a different VCI in the future, repeat the steps for manually pairing the VCI.

## **Restarting the tool:**

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1. Press and release the power button.



2. Select OK. The tool will now shutdown and restart automatically.

When switching vehicles, it is best to return to the home screen before disconnecting the VCI from the vehicle to avoid communication errors.

## **Automatic Pairing**

Automatic pairing will reconnect the last paired VCI to the handset during the start up process, as well as after unplugging and plugging the VCI back into an OBDII/DLC connector.

NOTE: After booting the handset, automatic pairing works immediately and ready when tool is booted. If it does not pair within a minute, repeat the manual VCI pairing procedure for that VCI. Typical connection time after Connect to VCI message is displayed is 5-15 seconds. If this happens, reboot the handset and allow it to autopair. If it still fails to auto-pair then repeat the manual VCI pairing procedure.

VCI connection status icon will typically take 10-20 seconds to update after pairing the VCI to the handset. When connection is lost, the VCI connection status Icon will typically take 10-20 seconds to update.

## **Cable connection**

Connect the VCI OBDII/DLC cable into the vehicle. Using the Using the VCI Communication cable provided in the kit, plug the appropriate end (B) of the cable into the VCI, then the opposite end into a USB VCI port on the handset. VCI Connection Manger will switch icons to the USB icon.

The same principle applies to switching vehicles as it did for wireless. Return to the home screen and then unplug and switch.



**USB** Cable

- 1. OBDII/DLC Cable
- 2. DLC Connector
- 3. USB Cable
- 4. Handset

#### Wireless Range

The wireless internet capability of the tool is designed to communicate with the router when it is within a range of roughly 90 feet, depending on the shop environment, even though it is possible to go farther. Every shop has different noise that can interfere and hamper the distance of a wireless network, such as cordless phones, certain lighting, other wireless networks in the area, and other signals.

## **Test Startup and Vehicle Connection**

- 1. Turn ON the handset.
- 2. Connect the OBDII/DLC cable to the VCI.
- 3. Connect the OBDII/DLC cable to the DLC on the vehicle.
- 4. Turn the ignition ON, but keep the engine OFF (KOEO).
- 5. Select vehicle from the Home screen.
- 6. Enter the vehicle information one of two ways:
  - Auto ID
  - Manual entry
- 7. From the home screen, select any diagnostic function.

## **Adjust Settings**

Settings allow the user to make adjustments to the following:

- Applications
- Software information
- · Software update
- Subscriptions
- User Detail
- Language
- Direct-Hit

ss02404 7/ 2:59 Active O Search Google for 1001 101001 101 **€** †∔† ľ CHECK Diagnost Informatio Read DTCs Data Stre 8 0, All System DTC Scan Ö, View Data S Veiw Saved Test OBD-II Tue, 10 May 2016 Select Vehicle T. 0. ю<sup>.</sup>

1. Select Settings from the home screen.

#### **Application Settings**

From the Settings screen select Application Settings. Follow the prompts on the screen to make changes to the following.

- Demo Mode
  - Turn Demo mode ON or OFF

NOTE: Select/deselect demo mode can be switched from the home screen as well.

- Units of measure
  - Switch between Standard or Metric
- Use TPR
  - Enable TPR
- Data Stream Scroll Options
  - Select scrolling options

ss02405

a 🧉	o c	Settings			:
Che	CUC	Application Settings	Demo Mode	ON	
Tahoe	LS 4.8	are Information	Units of Measure	Standard	
		are Update	Use TPR	Ask during test 👻	
		scriptions	Data Stream Scroll Ontions	Aburnut Ack -	
	4	ar Details		Amaya Aak	
		Contact Us			
		Language			
		Direct-Hit®			
	2	Service			
	8				

#### **Software Information**

From the Settings screen select Software Information. The current software versions will be displayed. Select View Open Source Software Details to view more in-depth information.

Current	Settings		:
Chevrolet	Application Settings	CoreManager 2.5.0.98	
4° 6		Windows DBCoordinatorAPI 2.5.0.98	
LS ah	Software Information	DBCoordinatorCore 2.5.0.98	_
-		Database Schema 61	_
	are Update	Database Publication Date 2016-01-15	_
	riptions	Diagnostic API WSI 2.6.2	_
		Launcher Version 1.0.0.0	_
	r Details	Serial Number 00HTOW0316000007OT	
4	ntact Us		
	Language		
	Direct-Hit®		
-	Service		
PG		Release Version: 1.0.0.0 Vew Open Source Solvere Details Release Notes	]

## Software Update

From the Settings screen select Software Update.

~~ ~~ ~

- · Manually check for updates
- Set update strategy
- Automatic download

NOTE: Active internet connection is required for this function.

If an update is available follow the prompts on the screen to update the handset.

Installing the software can take up to 45 minutes depending on Wi-Fi connection speed and quality.

	SSU	2405		
F	Current O 2005	Settings		:
	Chevrolet	Application Settings	Demo Mode	
l	Laho L	are Information	Units of Measure	]
		are Update	Use TPR Ask during test 💌	]
		ar Details	Data Stream Scroll Options	]
		Contact Us		
l		Language		
l	_	Direct-Hit®		
	-	Service		
	PG			

## Subscription

The tool must be registered to see this tab.

- 1. From the Settings screen select Subscription.
  - Heavy duty vehicle function is locked and must be unlocked.
  - Need to obtain subscription code.
  - After one year, the user will be required to renew the subscriptions to receive product updates. ss02408



2. Select Enter Subscription Code.

ss02409



3. Enter Subscription Code and select OK.

ss02410



## **User Details**

1. From the Settings screen select User Details.

ss02411

Settings		
Application Settings	Owner's First Name	John
Software Information	Owner's Last Name	Smith
Software Update	Distributor Name	Dealership
Subscriptions	Email	john.smith@gmail.com
	Phone	3135551234
User Details	Address 1	1234 Main St
Contact Us	Address 2 (optional)	
Langauge	City	Detroit
Direct-Hit®	State/Province	Michigan
Service	Postal Code	48235
	Country	United States

2. Select field to modify.



Note: The information saved in User Details will also update registration information.

#### Language

- 1. From the Settings screen select Language
- 2. Follow the prompts on the screen
  - English
  - Spanish
  - French (when available)

ss02413



#### **Direct-Hit®**

Identifix® Direct-Hit® provides:

- OEM specific information
- Wiring diagrams
- Technical Service Bulletins (TSBs)
- Diagnostic procedures
- Past reported fixes

Subscription is required to access Identifix®. To obtain username and password, select Identifix® link and subscribe.

- 1. From the Settings screen select Direct-Hit®
- 2. Follow the prompts on the screen

ss02414

Current	Settings			:
2004 Subaru	Application Settings		Direct-Hit®	
rester X2.5	Software Information	User Name		
ß	Software Update	Password		
	Subscriptions			
	User Details		Reset Save	
	Contact Us			
	Langauge		1	
	Direct-Hit®			
s	Service			
A5				

## Service

- From the Settings screen select Service
   Select Restart Communications

	Settings		
	Application Settings		
2	Software Information		
ĺ	Software Update		
Ì	Subscriptions		
Ì	User Details		
Ì	Contact Us		
	Langauge		
_[	Direct-Hit®		
	Service		
		Restart Communications	

3. Handset will Restart Communications

ss02	2416	
Ourset	Settings	i
2004 Subaru	Application Settings	
rester x2.5	Software Information	
18	Software Update	
	Subscriptions	
	User Details	Initializing Communication
	Contact Us	
	Langauge	
	Direct-Hit®	
	Service	
ABS		
		Nessart communications

## **GLOBAL OBDII APPLICATIONS**

## **Overview**

Global OBDII (also referred to as Generic OBDII) provides limited engine control and monitors the diagnostic control network of the vehicle. When a fault in the control network occurs, a DTC is recorded in the vehicle computer. This system is not vehicle specific so it is NOT necessary to select the vehicle to run a generic test. *NOTE: Global OBDII may be selected as a controller for a more specific General test.* 

## **Diagnostic Functions**



- 1. Select OBD-II from the home screen.
- 2. Follow the prompts on the screen.

#### **Readiness Monitors**

Mode 1 displays available monitor information.

The OBDII system has a series of systems that run self-tests. These systems or components have to be made ready by either turning on the ignition or manipulating the system in some other manner. This is called drive cycle.

Each system requires specific vehicle drive cycle and operating requirements to take place before the monitor self-check will run. OBDII systems require one monitor for current systems, or two monitors for older systems, are ready before testing can begin.

If the system is ready, no further action is required.

If the system is not ready, a drive cycle may need to be performed for that system.

Use the following procedure to verify the system is ready to be monitored.

Current	Generic OB	DII	I
	READINESS MODE 1	Readiness (Mode 1)	
	DATA STREAM MODE 1		
	EREEZE ERAME MODE 2	Monitor Description	Status
=	TREEZE TRAME MODE 2	Catalyst Monitor	Ready
OBD	DTC's MODES 3,4,7,A	Misfire Monitor	Not Supported
eneric	02 SENSORS MODE 5	2nd Air Monitor	Ready
0	NON-CONTINUOUS TESTS MODE 6	Evaporative Emissions Monitor	Ready
	SPECIAL TESTS MODE 8	Comprehensive Component Monitor	Ready
	VEHICLE INFO MODE 9	Fuel System Monitor	Not Supported
		Heated Catalyst Monitor	Not Supported
		A/C System Refrigerant Monitor	Not Supported
		Oxygen Sensor Monitor	Ready

1. View the readiness table to verify system status.

ss02418

- Ready: No further action is required.
- Not ready: Further action is required. Drive Cycle needs to be performed.
- Monitor not supported: Data is not supported on vehicle.

NOTE: A vehicle must be selected before diagnostic Information becomes available. Refer to diagnostic hub, Start New Section.

<b>Readiness Mode Button Definitions</b>	
Menu Button Tapping the Menu button displays a pop-up li that takes the user to more buttons.	
View Help Selecting View Help will open an online opera- tors manual.	
	Use Metric Units Selecting Metric Units will switch from English/ Standard Units to Metric Units
Use English/Standard Units Selecting English/Standard Units will switch from Metric Units to English/Standard Units.	
6	Take Screen Capture Selecting Take Screen Capture will save a copy of the current open screen.

## **Data Stream**

Mode 1 views live vehicle sensor data.

The data stream function shows live sensor and solenoid

data streaming from the vehicle's ECU (electronic control unit).



1. Select Data Stream Mode 1 from the Generic OBDII screen

#### ss02420



2. Select scrolling preference.

#### ss02421

Current	Data Stream for Global ODBII	∕ ≝_ î <b>t i∎ ⊚ i</b>
	Engine Coolant Temperature 4251 "F	Distance Since DTC Clear 545 miles
	Fuel Rail Pressure Gauge 25.8 psi	Distance MIL Active 618 miles
_	Fuel Rail Pressure Relative To Manifold Vacuum 89.6 psi	Evaporative Emissions System Vapor Pressure 17.04 inH2O
c OBD	Catalyst Temperature Bank 1 Sensor 1 266 "F	Catalyst Temperature Bank 2 Sensor 1 2741 "F
Generi	Catalyst Temperature Bank 1 Sensor 2 3677 "F	Catalyst Temperature Bank 2 Sensor 2 4723 °F
	Ambient Air Temperature Degrees 1450 "F	Vehicle Speed 867 mph
	Intake Air Temperature 4811 "F	Fuel Rail Pressure Gauge 343.8 psi
	Manifold Absolute Pressure 263.84 inHg	Manifold Absolute Pressure 62.92 inHg
	REFERENCE DATA.	51 / 200 fames 1 of 2

3. Follow the prompts on the screen.

Data Stream Button Definitions		
×	Enlarge Screen View Function To view the data in the enlarge view, press the Enlarge button.	
Ø	<ol> <li>Select Function:</li> <li>Choose only the data you want to view by checking the box in front of each desired data item.</li> <li>Select the Sort button.</li> </ol>	
A z	<ul> <li>Sort Function</li> <li>Select Sort to sort data items.</li> <li>Data may be sorted alphabetically, by graph, or by selection (checkbox checked).</li> <li>Sorting data items will reset the timeline frame counter, so sort these items before recording data. If sorting data while recording the recording will have a period of time where there is no data available.</li> </ul>	
	<ul> <li>Recording</li> <li>Select Recordings to view previously recorded data streams.</li> <li>Recordings are listed from newest to oldest. When the folder is full, the newest recording pushes the oldest one out of the list. Currently, there is no way to manually delete recordings.</li> <li>To view recordings, select the Recordings button near the top of the display.</li> <li>Select the desired recording.</li> </ul>	
·O	Take Screen Capture Selecting Take Screen Capture will save a copy of the current open screen.	
	Menu Button Tapping the Menu button displays a pop-up link that takes the user to more buttons.	
	Erase All Recordings	
	Clear All Data Select Clear Data to clear displayed data stream. This function will reset the timeline frame coun- ter and clear graphed data.	
	Use Metric Units Selecting Metric Units will switch from English/ Standard Units to Metric Units	

Data Stream Button Definitions		
Use English/Standard Units		
from Metric Units to English/Standard Units will switch		

Freeze Frame

Mode 2 views data captured when a fault occurred. Freeze frame shows a data stream snapshot that was automatically recorded by the ECU when one or more DTCs occurred.



Freeze frame records each sensor's current information at the time a DTC sets. This feature could be used when diagnosing an intermittent condition that requires certain conditions are met before the fault is active. *NOTE: DTCs are not always stored in Mode 2 freeze frame.* 

Freeze Frame Button Definitions		
	Menu Button Tapping the Menu button displays a pop-up link that takes the user to more buttons.	
?	View Help Selecting View Help will open an online opera- tors manual.	
	Use Metric Units Selecting Metric Units will switch from English/ Standard Units to Metric Units	
	Use English/Standard Units Selecting English/Standard Units will switch from Metric Units to English/Standard Units.	
6	Take Screen Capture Selecting Take Screen Capture will save a copy of the current open screen.	

## **DTCs Modes**

Modes 3, 4, 7, and A read and clear DTCs.



1. Select DTCs Modes from the Generic OBDII screen ss02424



2. Use the buttons and follow the prompts on the screen.


	DTCs Modes 3, 4, 5, A Button Definitions
<b>K</b>	Clear DTCs Button The Clear DTCs button is used to clear codes and remove all but permanent DTCs on the selected controller. To clear codes, complete the following: NOTE: Clearing DTCs will erase current Mode 1 Readi- ness monitor information and require the user go through necessary drive cycles over again. So, if Mode 1 information needs to be reviewed, be sure to view it before clearing codes. If a code will not clear, turn the ignition o for at least 10 seconds; turn it back on to KOEO, then retry. Some controllers will go to sleep after a period of inactivity and prevent clearing DTCs. This key cycle may be needed when attempting to communicate with other controllers after a period of time on a different controller.
2	Refresh DTCs Button Tapping the Refresh button initiates a fresh scan of DTCs from the vehicle.
<	Share DTCs Button Tapping the Share button opens the app and initiates one of two options, share by email or Bluetooth email concontaining a list of all the DTCs set.
	Menu Button Tapping the Menu button displays a pop-up link that takes the user to help content related to reading DTCs. <i>Note: an active internet connection will be</i> <i>required.</i>
	Use Metric Units Selecting Metric Units will switch from English/ Standard Units to Metric Units
	Use English/Standard Units Selecting English/Standard Units will switch from Metric Units to English/Standard Units.
<b>O</b>	Take Screen Capture Selecting Take Screen Capture will save a copy of the current open screen.

Mode 5 views O2 sensor monitor test results.

ss02	2425						
Current	Generic OB	DII				:	
	READINESS MODE 1	Oxygen Sensor Tests (Mode	5)				
	DATA STREAM MODE 1						
	EREEZE ERAME MODE 2	Description	Min	Value	Max	Units	
≡		Bank 1 Sensor 1					
OBC	DTC's MODES 3,4,7,A	High Sensor Voltage For Switch Time Calculation	0.000	0.003	1.275	v	
Seneric	02 SENSORS MODE 5		0.000	0.002	1.020	sec	
0	NON-CONTINUOUS TESTS MODE 6	Lean To Rich Jenson J Voltage	0.000	0.003	1.275	v	
	SPECIAL TESTS MODE 8	Low Sensor Voltage For Switch Time Calculation	0.000	0.003	1.275	v	
	VEHICLE INFO MODE 9	Maximum Sensor Voltage For Test Cycle	0.000	0.003	1.275	v	
		Minimum Sensor Voltage For Test Cycle	0.000	0.003	1.275	v	
		Rich To Lean Sensor Switch Time	0.000	0.002	1.020	sec	
		Rich To Lean Sensor Threshold Voltage	0.000	0.003	1.275	v	

Mode 5 displays the average of the O2 sensor monitor test results measured over a period of time. The parameters of this measurement vary between manufacturers. It may be necessary to run the vehicle for a period of time to allow the O2 sensors to fully warm up and begin operating as intended.

	Oxygen (O2) Sensors Button Definitions	
	Menu Button Tapping the Menu button displays a pop-up link that takes the user to more buttons.	
View Help Selecting View Help will open an online opera- tors manual.		
	Use Metric Units Selecting Metric Units will switch from English/ Standard Units to Metric Units	
	Use English/Standard Units Selecting English/Standard Units will switch from Metric Units to English/Standard Units.	
6	Take Screen Capture Selecting Take Screen Capture will save a copy of the current open screen.	

### **Non-Continuous Tests**

Mode 6 views onboard monitoring test results for noncontinuous monitor systems.

- $(\bigcirc)$ Generic OBDII ÷ 0 READINESS MODE 1 Oxygen Sensor Tests (Mode 5) DATA STREAM MODE 1 FREEZE FRAME MODE 2 OBDII DTC's MODES 3,4,7,A Com ent parameters may not be valid if Readiness Status is 'Not Generic 02 SENSORS MODE 5 Ready CANCEL CONTINUOUS TESTS SPECIAL TESTS MODE 8 VEHICLE INFO MODE 9
- 1. Select Non-Continuous Tests from the Generic OBDII screen

ss02425

2. Follow the prompts on the screen.

ss02427

Current	Generic OB	DII				i
	READINESS MODE 1	Non-Contir (Mode 6)				
	FREEZE FRAME MODE 2	ECU: ENGINE				
c OBDI	DTC's MODES 3,4,7,A	TID 1 TID 1			Failed	
eneri	O2 SENSORS MODE 5	CID 1 TID 1				
, a	NON-CONTINUOUS TESTS MODE 6	N/A MN	62038 VALUE	3776 MAX	N/A UNITS	
	SPECIAL TESTS MODE 8	TID 2 TID 2 CID 2 TID 2			Passed	
	VEHICLE INFO MODE 9	N/A MN	3073 VALUE	21587 MAX	N/A UNITS	
		TID 3 TID 3 CID 3 TID 3			Failed	
		N/A MN	55785 VALUE	27062 MAX	N/A UNITS	

Non-Continuous Monitor Tests (Mode 6) are a pass/fail test. Some examples are certain EVAP tests, catalyst, and EGR. The following information is reported:

- ECU.
- TID (test identification) which indicates the system monitor.
- CID (component identification) which indicates the component tested and its test value.
- Minimum value, maximum value, and current value for each non-continuous monitor supported.
- Pass or fail test results.

Each vehicle manufacturer assigns a code number to their system monitors and components. Refer to the vehicle manufacturers Mode 6 code chart to determine the failure indicated by the TID and CID. If this chart is not available, run an automated system test (AST) from the DTC screen and select Mode 6. See Read DTCs section for more information regarding steps to complete that action.

١	Non-Continuous Tests Button Definitions
	Menu Button Tapping the Menu button displays a pop-up link that takes the user to more buttons.
?	View Help Selecting View Help will open an online opera- tors manual.
	Use Metric Units Selecting Metric Units will switch from English/ Standard Units to Metric Units
	Use English/Standard Units Selecting English/Standard Units will switch from Metric Units to English/Standard Units.
0	Take Screen Capture Selecting Take Screen Capture will save a copy of the current open screen.

## **Special Tests**

Mode 8 controls the operation of an onboard system, test, or component which is typically the EVAP system or diesel particulate filter (DPF) test.



1. Select Special Tests from the Generic OBDII screen.

ss02428

Current	SPECIAL TE	ESTS E			
	ALL TESTS	All Special Tests			
	DPF TESTS	Search All Special Tests			
	EVAP TESTS	DPF Tests			
ICB		Diesel Particulate Filter Regeneration			
ic O		EVAP Tests			
Gene		Evaporative System Leak Check			

When available, this selection will automatically take the user to the special test screen where the test group menu will be displayed. Make a selection to enter the test, then follow the on-screen prompts. Mode 8 will not be supported on all vehicles. If you wish to run an EVAP test on a vehicle that does not support Mode 8, enter vehicle specific mode and refer to the Special Tests section on how to run a special test.

	Special Tests Button Definitions
	Menu Button Tapping the Menu button displays a pop-up link that takes the user to more buttons.
?	View Help Selecting View Help will open an online opera- tors manual.
	Use Metric Units Selecting Metric Units will switch from English/ Standard Units to Metric Units
	Use English/Standard Units Selecting English/Standard Units will switch from Metric Units to English/Standard Units.
.0	Take Screen Capture Selecting Take Screen Capture will save a copy of the current open screen.

ss02429

### Vehicle Info

Mode 9 views Vehicle Identification Numbers (VINs), calibration ID(s), and verification number(s).

Current	Generic OB	DII	:
	READINESS MODE 1	Vehicle Informationation (Mode 9)	
	DATA STREAM MODE 1		-
	FREEZE FRAME MODE 2		
OBDII	DTC's MODES 3,4,7,A	Mala avera lina kan in OM and its English in OFF	
eneric	O2 SENSORS MODE 5	CANCEL OK	
0	NON-CONTINUOUS TESTS MODE 6		
	SPECIAL TESTS MODE 8		
	VEHICLE INFO MODE 9		

1. Select Vehicle Info from the Generic OBDII screen.

ss02431

ss02430

2. Follow the prompts on the screen.

Ourset	Generic OBDII :		
	READINESS MODE 1	Vehicle Informationation (Mod	de 9)
	DATA STREAM MODE 1		
	FREEZE FRAME MODE 2	Vehicle Identification Number	
BDII	DTC's MODES 3,4,7,A	Controller	Vehicle Identification Number
uic O		ENGINE	1G6DM57N530102274
Gene	02 SENSORS MODE 5	Calibration Identification Number	
	NON-CONTINUOUS TESTS MODE 6	Controller	Calibration Identification Number
	SPECIAL TESTS MODE 8	ENGINE	BOSCHA1037366956
	VEHICLE INFO MODE 9	Calibration Verification Number	
		Controller	Calibration Identification Number
		ENGINE	4EF7033C
		Counters	

The 17 digit VIN provides information on the vehicle including year of manufacture, engine and possibly transmission type, vehicle body style, and color.

Mode 9 is not supported on older vehicles, so a visual check of the VIN through the windshield or on the door sticker would be required to obtain that VIN. Mode 9 is used on the tool to Auto ID the vehicle and for calibration verification to see if a newer calibration is available for re-flashing the ECU.

Vehicle Info Button Definitions				
<ul> <li>Menu Button</li> <li>Tapping the Menu button displays a pop-up link that takes the user to more buttons.</li> </ul>				
?	View Help Selecting View Help will open an online opera- tors manual.			
	Use Metric Units Selecting Metric Units will switch from English/ Standard Units to Metric Units			
	Use English/Standard Units Selecting English/Standard Units will switch from Metric Units to English/Standard Units.			
.0	Take Screen Capture Selecting Take Screen Capture will save a copy of the current open screen.			

# 

Before performing any diagnostic functions, refer to the Safety Precautions and the warnings provided by the vehicle manufacturer. In addition, follow any warnings and instructions provided on the handset.

Note: Select Demo to generate simulated data for demonstration purposes.



- 1. Select, Select Vehicle to manually choose the vehicle, AutoID to automatically identify the vehicle or enter the VIN.
- 2. Select the vehicle specification options on each screen until the complete vehicle information is entered.

### Auto ID

Auto ID uses the vehicle's Mode 9 VIN information, when available. Most vehicles from 2004 and newer support Auto ID, but some other older vehicles may support Mode 9 too.

### Auto ID Operation:

1. Handset must be on and and paired with the VCI which is connected to a vehicle.





- 2. Select Start Auto ID
- 3. Once selected the handset will begin communicating with the vehicle.

ss02434				
VEHICLE BAY	RECENT	FAVORITES	SEARCH BY VIN	Q
Enter New Vehicle				
C Start AutoID				
🖨 овр-н				
Heavy Duty		Start Auto ID		
		Make sure the key is ON and the Engine is OFF.		
		OK Cancel		
		7		
Demo Mode ON				

4. The vehicle must have the key on, engine off (KOEO).

ss02435			
VEHICLE BAY	RECENT	FAVORITES	SEARCH BY VIN
Enter New Vehicle	2006 Hond	d	
C Start AutoID	EX 2.4 ENGINE		
<b>⇔</b> <sup>?</sup> <sup>OBD-II</sup>			
Heavy Duty			
		Reading OBDII Mode-9 VIN	
Demo Mode ON			

- 5. Once the VIN is retrieved it is compared to the vehicle database.
- 6. If a match is found the vehicle selection information will be displayed on the screen.
- 7. Wait for Auto ID to finish

SSU2436					
VEHICLE BAY	RECENT	FAVORITES		SEARCH BY VIN	_ Q
Enter New Vehicle	VIN Match Resu	ilts (3)		1G6DM57N53	0102274
C Start AutoID	CAD	ILLAC	2003 Cadillac CTS Luxury Sport 3.2, GAS, ~ Naturally Aspirated, DOHC		
	CAD	ILLAC	2003 Cadillac CTS Base 3.2. (OAS., Naturally Aspirated, DOHC		
Demo Mode 0N	CAD	ILLAC	2003 Cadillac CTS Luxury 3.2, GAS,- Naturally Aspirated, DOHC		

8. Select the desired vehicle from the list.



9. Select the desired vehicle controller.

ss02438							
YEAR MAKE	MODEL	SUBMODEL	ENGINE	CONTROLLER			
MAINTENANCE TESTS	E	IGINE (01)	GLO	BAL OBDII	AUTO TRANSMIS (02)	SSION	ABS (03)
AIRBAG (15)	ALL	OEM Warning Improp Volksw in 1998 can cau	er installation agen/Audi ra model year use severe da	of aftermarket dio not produce and newer vehi amage to scan t	radio or d for use cles ools.	\$ (08)	AUTO ROOF (25)
AIR FUEL TANK (58)		ls the v (if unsu	ehicle equipp re select "Ye	oed with this sty s")?	e radio	ENTS	NAVIGATION (37)
				Yes			
PARK ASSIST (7	5) R	4		No		втем	STEERING WHEEL (16)
Selected 2003	Cadillac (Base) 3.2 Gas						Cancel

10. OEM warnings or qualifiers may pop up. Answer appropriately.

### SS02439

ę		♥⊿ 🖁 2:59
Active O	Search Google for	
CADILLAC	Read DTCs Data Stream Special Tests Diagnostic	
2003 CADILLAC CTS (Base) 3.2 Gas	Maintenance Tests         Image: Scan         Browser         Settings	
ENGINE	Automated System Tests Vew Saved Tests	
OBD-II		
Select Vehicle	Tue, 10 May 2016	
		0.

11. At this point vehicle entry will disappear and the user will be able to begin using diagnostic functions on the vehicle.

## Manual Entry

The handset must be turned on, be paired with the VCI which is connected to the vehicle and currently displaying the home screen. Once those conditions are met, complete the following:



1. Select "Select Vehicle"



2. From the Vehicle Bay, select Enter New Vehicle.

ss02441				
YEAR MAKE	MODEL SUBMODEL	ENGINE CONTROLLER		
To confirm via VIN, use the tenth digit				
· 15	'14	'13	i12	'11
VINF	VIN E	VIN D	VIN C	VIN B
<u>'10</u>	·09	·08	·07	·06
VINA	VIN 9	VIN 8	VIN 7	VIN 6
'05	·04	·03	·02	·01
VIN 5	VIN 4	VIN 3	VIN 2	VIN 1
·00	·99	·98	·97	'96
VIN Y	VIN X	VIN W	VIN V	VIN T
Selected >				Cancel

3. Select the model year of the vehicle.



4. Select the make of vehicle.



5. Select the model.



6. Select the sub-model (trim level).



7. Select the engine.

Note: Some vehicles may not require this selection.



8. Select the desired vehicle controller.

The following information may be necessary to identify the vehicle or inform the user of special conditions:

- Transmission type
- With or without TPMS
- ABS may be disabled during this test.



9. At this point vehicle entry will disappear and the user will be able to begin using diagnostic functions on the vehicle.

### Recent



1. Select, Select Vehicle.

ss02448			
VEHICLE BAY	RECENT FAVORITES	S	SEARCH BY VIN
Enter New Vehicle	2008 Chrysler 2015 A Crossfire IL	X 1999 Chevrolet	2003 Cadillac CTS
C Start AutoID	Limited 3.2 Base ENGINE TRANSM	2.0 LS 5.7 ISSION PCM	Luxury Sport 3.2 ENGINE
<b>⇔</b> <sup>?</sup> <sup>OBD-II</sup>			
Heavy Duty			
Demo Mode ON			

2. The Recent tab will show the most recent vehicles selected.

ss02449				
VEHICLE BAY	RECENT FAVORITES	3	SEAF	
Enter New Vehicle	2008 Chrysler Crossfire	2015 Acura	1999 Chevrolet C2500 2WD	2003 Cadillac CTS
Start AutolD	Limited 3.2 ENGINE	Base 2.0 TRANSMISSION	LS 5.7 PCM	Luxury Sport 3.2 ENGINE
🖨 <sup>°</sup> obd-11				
Heavy Duty	Set as o	surrent vehicle		
	Mark as	favorite		
	Delete f	rom recents		
Demo Mode ON				

- 3. Press and hold a recent vehicle tile and select one of three choices:
  - Set as current vehicle
  - Mark as favorite
  - Delete from recents
- 4. Select Set as current vehicle or just tap on the recent vehicle tile.

ss02450				
YEAR MAKE	MODEL SUBMODEL	ENGINE CONTROLLER		
MAINTENANCE TESTS	ENGINE	GLOBAL OBDII	ELECTRONIC SHIFTER	TRANSMISSION
ABS	WIRELESS CTRL MODULE (TPMS)		FINAL DRIVE CONTROL MODULE	AUDIO
CABIN COMP NODE	DRIVERS DOOR MODULE	ELECTRIC OVERHEAD MODULE	FCM CENTRAL GATEWAY	HANDS FREE MODULE
HEAT VENT A/C	HEATED SEAT MODULE	MEMORY SEAT	PASSENGER DOOR MODULE	RADIO
	7			
Selected 1999 Che C2500 2	wrolet 2WD LS 5.7			Cancel

5. Select the desired vehicle controller.

The following information may be necessary to identify the vehicle or inform the user of special conditions:

- Transmission type
- With or without TPMS
- ABS may be disabled during this test.



6. At this point vehicle entry will disappear and the user will be able to begin using diagnostic functions on the vehicle.

#### ss02432 ▼⊿ 259 Active O Search Google for 1001 101001 0101 СНЕСК Ł Diagnosti Information d DTC Data Strea 8 0, X All System DTC Scan ce Te Setti No 0, Æ d System Test Viev Data Str Record Voiw Saved Tec OBD-II ....ay∠016 Select Vehicle 0 0.

1. Select, Select Vehicle.



2. Select Favorites tab.

ss02453		
VEHICLE BAY	RECENT FAVORITES	
Enter New Vehicle	2008 Chrysler Crossfire	
S Start AutolD	Engine	
<b>⇔</b> <sup>?</sup> obd-#		
Heavy Duty		
Demo Mode ON		

3. Select a vehicle.

800.MACTOOLS

YEAR MAKE	MODEL SUBMODEL	ENGINE CONTROLLER		
MAINTENANCE TESTS	ENGINE	GLOBAL OBDII	ELECTRONIC SHIFTER	TRANSMISSION
ABS	WIRELESS CTRL MODULE (TPMS)		FINAL DRIVE CONTROL MODULE	AUDIO
CABIN COMP NOD	DRIVERS DOOR MODULE	ELECTRIC OVERHEAD MODULE	FCM CENTRAL GATEWAY	HANDS FREE MODULE
HEAT VENT A/C	HEATED SEAT MODULE	MEMORY SEAT	PASSENGER DOOR MODULE	RADIO
acted Cross	hrysler afire limited 3.2			Cancel

4. Select the desired vehicle controller.

The following information may be necessary to identify the vehicle or inform the user of special conditions:

ss02455

- Transmission type
- With or without TPMS
- ABS may be disabled during this test.

74 2:59 Search Google fo Active O (1001) (01001) (0101) **A** 1 CHECK Diagn Inform Read DTC: Data S CHRYSLER Ö, 8 2008 CHRYSLER Crossfire Limited 3.2 (....) All System DTC Scan ance Test 0 ENGINE Æ View Data St Recor od Te Di OBD-II Tue, 10 May 2016 Select Vehicle Image: Image:

5. At this point vehicle entry will disappear and the user will be able to begin using diagnostic functions on the vehicle.



1. Select, Select Vehicle.



#### 2. Select OBD-II

Note: For more information refer to the Global OBDII section.

#### ss02432 ▼⊿ 🛙 2:59 Active O Sear 1001 101001 0101 CHECK **₽** †‡† ŗ Diagn Informa ead DTC Data Sti Ö, Ş All System DTC Scan οT Ö, Data S OBD-II . way∠016 Select Vehicle 4 Ο.

1. Select, Select Vehicle.



#### 2. Select Heavy Duty.

Note: You need to have a Heavy Duty subscription in order for Heavy Duty to be selectable.



3. Select a Cable.



4. Select a controller.

ss02460		
Ŷ		2:59 🕻 🗸
Active O	Search Google for	
	Read DTCs	
Heavy Duty HEAVY DUTY Engine MID 128	Maintenance Tests All System DTC Scan Browser Settings	
J1587/1708	Automated System Yetw Saved Tests	
OBD-II		
Select Vehicle	Tue, 10 May 2016	
		0.

5. At this point vehicle entry will disappear and the user will be able to begin using diagnostic functions on the vehicle.

Note: Special Test, Diagnostic Information, Maintenance Tests, All System DTC Scan, Atuomated System Test are not available.

### J1587/1708 DTC Nomenclature

### **MID** - Message Identification

The MID Identifies the Component Example: MID 128 = Engine MID 130 = Transmission MID 136 = Brakes (ABS)

### **PID - Parameter Identification**

The PID Identifies the data from a components electrical parts Example: PID 084 = Road Speed (MPH) PID 100 = Engine Oil Pressure (PSI) PID 177 = Transmission Oil Temperature (Degrees)

### SID - Subsystem or Status Identification

The SID identifies the status of a components electrical part Example: SID 001 = Injector Cylinder #1 (on/off) SID 034 = Reverse Switch (Open/Closed) SID 163 = Transmission Range (HI/LO) Note: MID related SID's start with Number 1 and sequentially increase. Common SID's start at Number 255 and sequentially increase.

### FMI - Failure Mode Identifier

The FMI describes the type of failure detected in the part identified by the PID or SID. The FMI, and either the PID or SID combined to form a given diagnostic Fault code. Example: FMI 002 = Data erratic, Intermittent or incorrect FMI 005 = Current below normal or Open circuit FMI 007 = Mechanical System Not Responding FMI 011 = Failure Mode not Identifiable

### **Normal Message**

MID-PID/SID-FMI or 128-084-002 128 = Engine 084 = Vehicle Speed Sensor 002 = Data erratic, Intermittent or incorrect Example: The Vehicle speed sensor circuit is bad.

### J1939 DTC Nomenclature

### SA - Source Address

The SA field contains the ECU that is sending the message Example: SA 0 = Engine SA 3 = Transmission SA 11 = Brakes System Controller

### **SPN - Suspect Parameter Number**

The SPN is used to identify the item for which diagnostics are being reported Example: SPN 156 = Injector Timing Rail 1 Pressure SPN 031 = Transmission Range Position SPN 639 = J1939 Network

### FMI - Failure Mode Identifier

The FMI describes the type of failure detected in the part identified by the SPN. The FMI, and either the SPN combined to form a given diagnostic Fault code. Example: FMI 002 = Data erratic, Intermittent or incorrect FMI 005 = Current below normal or Open circuit FMI 007 = Mechanical System Not Responding

FMI 011 = Failure Mode not Identifiable

### **Normal Message**

SA/SPN/FMI or 3-639-02 03 = Transmission 639 = J1939 002 = Data erratic, Intermittent or incorrect Example: The Transmission has detected the J1939 network has an error.

# **READ DTCS**

### Overview

The Read DTCs function allows reading, clearing, printing, and sharing (wireless or email) of vehicle DTCs. Onboard Code Assist information may also be available, for selection when DTCs are found. This information contains pertinent details regarding the selected DTC. For more detailed comprehensive information, go to Service and Settings, Direct-Hit® to subscribe.

Vehicle must be selected from the Vehicle Bay and the handset must now be displaying the Home Screen.



1. Select Read DTCs from the home screen.

ss02462



2. Codes will be read from the selected controller and displayed on the screen.

Read DTCs Button Definitions				
t.	Ford/Lincoln/Mercury Self Diagnostics button displays a pop up menu allowing the user to choose between specific special tests.			
0	GM/GMC Status button displays a pop up menu allowing the user to view the status on DTCs			
ŀŌ	Clear DTCs Button The Clear DTCs button is used to clear codes and remove all but permanent DTCs on the selected controller. To clear codes, complete the following: <i>NOTE:</i> <i>Clearing DTCs will erase current Mode 1 Readi-</i> <i>ness monitor information and require the user</i> <i>go through necessary drive cycles over again. So,</i> <i>if Mode 1 information needs to be reviewed, be</i> <i>sure to view it before clearing codes.</i> <i>If a code will not clear, turn the ignition o for at</i> <i>least 10 seconds; turn it back on to KOEO, then</i> <i>retry. Some controllers will go to sleep after a</i> <i>period of inactivity and prevent clearing DTCs.</i> <i>This key cycle may be needed when attempting</i> <i>to communicate with other controllers after a</i> <i>period of time on a different controller.</i>			
3	Refresh DTCs Button Tapping the Refresh button initiates a fresh scan of DTCs from the vehicle.			
~	Share DTCs Button Tapping the Share button opens the app and initiates one of two options, share by email or Bluetooth email concontaining a list of all the DTCs set.			
	Menu Button Tapping the Menu button displays a pop-up link that takes the user to help content related to reading DTCs. <i>Note: an active internet connection will be</i> <i>required.</i>			
8	View Help Selecting View Help will open an online opera- tors manual.			
0	Take Screen Capture Selecting Take Screen Capture will save a copy of the current open screen.			

## Ford/Lincoln/Mercury

When connected to a Ford/Lincoln/Mercury vehicle a pop up menu allowing the user to choose between specific special tests.

SSU2463		
Active     Active     O     Ford     End     Subsychia     Subsychia     PCM	Search Google for	74 N 2259
OBD-II	Automated System Test Veiw Saved Tests View Data Stream Recordings Diagrams	
Select Vehicle	Tue, 10 May 2016	
		5

1. Select Read DTCs from the home screen.

ss02464

. . . . .

Current	Diagnostic Trouble Codes 🕴 🔹	Q	<	I
PcM Mustang PcM Sheby GT500	Select Option  Read DTCs  KOEO  KOER  Reset KAM			

2. Tapping an option in the menu takes the user to that test. Follow the prompts on the screen.  $_{\rm ss02465}$ 

Current	Diagnostic	Trouble Codes	4 0	Q	<	
2003 Ford	B1213 Less Than Two Keys Programmed To PATS	B1219 Fuel Tank Press Sens Circuit	B1220 Fuel Tank Press Sens Circuit Open			
Focus zx3 2.0	Current Codes	Current Codes	Current Codes			
ENGINE						

3. Codes will be read from the selected controller and displayed on the screen.

### GM/GMC

When connected to a GM/GMC vehicle a pop up menu appears, allowing the user to choose between specific special tests.



1. Select Read DTCs from the home screen.

ss02467

Current © 2009 Chevrolet	Diagnostic Trouble Codes Press DTC for Repair information						<b>¢</b> Share	Menu
Malibu LS 2.4		Sele	ect Option					
		ି ଜ	Check DTC Status					
		0	Failure Records					
ENGINE		L				J		

2. Tapping an option in the menu takes the user to that test. Follow the prompts on the screen.  $_{\rm ss02468}$ 



3. Codes will be read from the selected controller and displayed on the screen.

### 800.MACTOOLS

### **Manual DTCs**

Certain vehicles do not support standard DTC protocol and will require a manual process for retrieving and clearing codes.

ss02469



1. Follow the prompts on the screen for retreiving DTCs.

#### ss02470



2. Select Diagnostic Trouble Codes button.

ss02471

Current	Diagnostic Tro	Diagnostic 1	Trouble Codes	
2002 Subrau	1) Take out diagnosis conn	11	Start Code: Trouble Code Is Shown After Start Code Only Start Code Is Shown In Normal Condition	
Forest	2) Turn ignition switch Off.	21	Abnormal ABS Sensor (Open Circuit Or Input Voltage Too High) - Front Right ABS Sensor	
	<ol> <li>Connect diagnosis conn</li> <li>Turn ignition switch On</li> </ol>	22	Abnormal ABS Sensor (Abnormal ABS Sensor Signal) - Front Right ABS Sensor	
	5) ABS warning light is set i	23	Abnormal ABS Sensor (Open Circuit Or Input Voltage Too High) - Front Left ABS Sensor	
	6) After the start code (11) i These repeat for a maximu	24	Abnormal ABS Sensor (Abnormal ABS Sensor Signal) - Front Left ABS Sensor	order of the last information first.
ABS	7) NOTE: When there are n	25	Abnormal ABS Sensor (Open Circuit Or Input Voltage Too High) - Rear	de (11) is shown.
	<ul> <li>8) When on-board diagnosi stored in the EEPROM as a (Stored codes will stay in m</li> </ul>		Close	h (up to a maximum of three) will be b, the most recent three will be stored.

3. Follow the prompts on the screen.

ss02472



4. Select Clear DTCs button.

ss02473

Current O	Diagnostic Trouble Codes 🛛 🗢 🗢 🕻 🗤 🗄
2002 Suberu	
rester ese 2.5	1) After calling up a diagnostic trouble code (DTC), disconnect diagnosis connector terminal 6 from diagnosis terminal.
6	2) Repeat 3 times within approx. 12 seconds; connecting and disconnecting terminal 6 and diagnosis terminal for at least 0.2 seconds each time.
	3) NOTE: After diagnostics is completed, make sure to clear memory. Make sure only start code (11) is shown after memory is cleared.
ABS	

5. Follow the prompts on the screen.

### **Code Criteria**

Codes will be read from the selected controller and displayed on the screen.

ss02474



If a DTC has code criteria available there will be an indication in the upper right corner of the listed DTC.

©	B1213	vo Keys Programmed To Passi	ive Anti-Theft System		
008 Ford		Code Assist		Repair	Hotline 88.6210
Banch (	Code Criteria	Description	Element	Action DIRECT-F	
'n	CODE ASSIST	Frequently Reported Fixes	Ignition Key(s)	Replaced Coord	le
	PCM Pin	Frequently Reported Fixes	Vehicle Theft Deterrent (VTD) System Learn Procedure	Performed	halli
	SCAN TEST				
	🔊 Diagram				inams
	V WAVEFORM			4	
NIDN	TSB REFERENCE				

### **DTC** Info

DTC Info allows the technician to find details related to a given DTC.

### Description

Displays the description associated with the selected DTC.

### **Code Criteria**

Provides information regarding how the DTC is set.

### Code Assist

Provides information regarding the kind of action other technicians found successful when faced with the same DTC.

### PCM Pin

Provides detailed information related to the actual pins on the PCM that are associated with the selected DTC.

### Location

Aids the technician in determining where on the vehicle their attention should be directed.

### Scan Test

Provides the technician with detailed test steps.

### Diagram

Provides a circuit diagram related to the selected DTC.

### Waveform

Presents reference waveform information to help the technician understand and fix the problem.

#### **TSB Reference**

Provides the technician with TSBs associated with the selected DTC.

#### Connector

Presents information related to the connector to help the technician understand and fix the problem. Identifix® Direct-Hit®

A subscription is required to access Identifix® Direct Hit®. To obtain a username and password, go to www. identifix.com and fill out the necessary steps to acquire an account.

Once account is setup with Identifix®:

- Select Settings button from the Home screen.
- Select Direct-Hit® from the available tabs on the left margin of the screen.

- Input the username and password acquired from Identifix  $\ensuremath{\mathbb{B}}$  by selecting the empty field.
- Using the virtual keyboard enter the required information for both fields.
- Select GO.

# **DATA STREAM**

### **Overview**

The data stream function shows live sensor and solenoid data streaming from the vehicle ECU (electronic control unit). Connect the VCI with the vehicle at key on engine off or key on engine running to see live dynamic data, instead of static live data. Each data item has a selection checkbox and a display format menu.

### **Basic Data Stream Procedure**



- 1. From the home screen, select Data Stream.
- 2. If the vehicle is NOT a Volkswagen/Audi then go to step 5.

ss02	ss02477			
Current O 2009	Data Stream	1	)	r i
Audi	All Data Groups	All Data Groups		
uatto	Volkswagen/Audi Group	Search all Data Streams		Q
A4 O	System Status	Volkswagen/Audi Group	Select	
	Ignition	System Status	Select	Customize
	Knock Control	Ignition	Select	Customize
	Lambda/Catalytic	Knock Control	Select	Customize
	Engine Speed/Idle			
	Throttle Valve	Lamdba/Catalytic	Select	Customize
w	Exhaust Reduction	Engine Speed/Idle	Select	Customize
BNG	Control Module identification	Throttle Valve	Select	Customize
	Special 86-89	Exhaust Paduation	Select	Customize

3. Follow the prompts on the screen. Select or customize a group. Data Groups

- Data groups may be selected at any time within data stream.
- Select the data group menu button from the top of the screen.
- Scroll through the menu until the desired data group is found, then select it.
- Note: It is possible to change controllers while in data stream.
  - Select the controller selection button.
  - Select the desired controller.
  - Once controller is selected, select the data group menu button.
  - Select the desired data group.



4. Select the Volkswagen/Audi Group. When finished go to Step 6.

#### ss02479

Current O	Data Stream	n	<b>•</b> ■* :
Cadillac	All Data Groups	All Data Groups	
CTS	All Data Items	Search all Data Streams	Q
S Automotion	EVAP Data	All Data Items	Select Customize
	Engine Data 1	Clutch Start Switch (If Equipped)     PNP Switch (If Equipped)     A/C Hinh Side Deserve Sensor	* Cruise Clutch Switch (If Equipped)     A/C High Side Pressure     A/C Off Enr Wirke Open Throttle
	Engine Data 2	A/C Pressure Disable     A/C Relay Command     A/C Relay Command	A/C Relay     A/C Request
	Engine Data 3	Acceleration Pedal Position At the     Accelerator Pedal Position Sensor 1 Voltage	Accelerator Pedal Position Angle     Accelerator Pedal Position Sensor 2 Voltage
	Fuel Trim Data	EVAP Data	Select Customize
	Misfire Data	Accelerator Pedal Position Angle     Calculated BARO     Engine Coolant Temperature	Battery Voltage     Desired Idle Speed     Engine Run Time
ENGINE	TAC Data	Engine Speed     Evaporative Emissions Vent Solenoid	Evaporative Emissions Canister Purge     Fuel Level
		Fuel Level Sensor Left Tank     Fuel Tank Pressure	Fuel Level Sensor Right Tank     Fuel Tank Pressure Sensor
		Engine Data 1	Select Customize

5. Follow the prompts on the screen. Select or Customize a group. Data Groups

- Data groups may be selected at any time within data stream.
- Select the data group menu button from the top of the screen.
- Scroll through the menu until the desired data group is found, then select it.

Note: It is possible to change controllers while in data stream.

- Select the controller selection button.
- Select the desired controller.
- Once controller is selected, select the data group menu button.
- Select the desired data group.

Current © 2003	All Data Items	∕8≞ ⁺ <b>+ '■' :</b>
Cadillac Co N	Vehicle Speed 12 mph	Intake Air Temperature 111 "F
CT. ry Sport 3	Engine Coolant Temperature 68 "F	Fuel Tank Pressure -5.7 inH2O
Luxus	Mileage Since DTC Cleared 37900 miles	Calculated converter Temperature 574 "F
	Mileage Since MIL Request 31075 miles	Fuel Level 13.61 gal
	AVC High Side Pressure 433 psi	Calculated BARO 8 psi
	Startup Engine Coolant Temperature 34 "F	Start Up Intake Air Temperature 217 °F
	Mass Air Flow 171.90 g/s	Ignition 1     13.3 V
<b>_</b>	Evaporative Emissions Canister Purge 63 %	Spark Advance -10.8*
ENGIN		
	RUFFERND DATA.	1 of 2 139 / 200 tranes

6. Follow the prompts on the screen.



7. The selected data will be displayed.

### **Enlarge Screen View Function**

1. Enhanced data stream provides OEM specific information.

ss02482

Current O 2002	All Data Items			≝≐ ⁴ '■' :
CTS P	Vehicle Speed	Engine Coolant Temperature	Mileage Since Cleared 125792 mika 22817 8+647 High	Mileage Since MIL Request           30054           miles           12277         29670           4498           Low         Avage
BNGNE	Proble Ar Temperature     200     20	Puel Tank Pressure     10     10     4.3	Calculated Converter Temperature 1994 50	Fod Level     Ilog     18,31     gr     50     482     22.52     Low     Aog     High     10

To view the data in the Enlarge view, press the Enlarge button.

ss02483



*Note: The far left 2-data tiles will be enlarged to select the specific data tiles to be enlarged.* To see more graphs use your finger to swipe the screen.

Note: Depending on your Scroll Options preference either horizontally or vertically.

	Data Stream View Button Definitions
×K	Reduce View Function To Zoom Out, press the Reduce View button.
××	Enlarge View Function To view the data in the enlarge view, press the Enlarge View button.
×	Zoom Out Function To Zoom Out, press the Zoom Out button.
	Zoom In Function To view the data in the Full Screen Mode, press the Zoom In button.

### **Full Screen View Function**

To view the data full screen, press Full Screen button.

ss02484



To view the data in Full Screen view, press the Zoom In button.



ss02485

Note: The top right graph will be shown full size.

To see more graphs use your finger to swipe the screen.

Note: Depending on your Scroll Options preference either horizontally or vertically.
### **Display Types**

To change data item display types, select the data item menu button located in upper right ss02488



	Display Type Button Definitions
	Menu Button Tapping the Menu button displays a pop-up link that takes the user to more buttons.
##	Digital To change to digital form, select the ## Digital button.
	Line Graph To change to line graph, select the Line Graph button.
	Bar Graph To change to bar graph, select the Bar Graph button.
49	Change Color To change the color of a graph, select the Change Color button.
þ	Clear All Data Select Clear Data to clear displayed data stream. This function will reset the timeline frame coun- ter and clear graphed data.
.0	Take Screen Capture Selecting Take Screen Capture will save a copy of the current open screen.
	Use Metric Units Selecting Metric Units will switch from English/ Standard Units to Metric Units.

Display Type Button Definitions				
Use English/Standard Units Selecting English/Standard Units will switch				
from Metric Units to English/Standard Units.				

NOTE: Not all display types are available for all data items

## **Select Function**



ss02490



1. Select the Select button.

Current	Data Stream All Data Items	2 <b>↑</b>	Clear Selection		ź <b>↑</b>	• <b>=</b> ®	:
2003 Cadilac	Vehicle Speed	Vehicle Speed	Intake Air Temperature				102 °F
CTS / Spott 3.2	Engine Coolant	Engine Coolant Temperature	Fuel Tank Pressure				3.0 inH2O
Unanal	Mile: Jeared	Mileage Sin     Clearer	Calculated Converter Temperature	erature			855 °F
	Mileage Since MIL Request	Mile. MIL	Fuel Level				17.62 gal
	A/C High Side Pressure	A/C High Side Pressure	Calculated BARO				7 psi
	Startup Engine Coolant Tempera	Startup Engine Coolant	Start Up Intake Air	sture			167 °F
	Mass Air Flow	Temperature	Temperature				2.0 V
	Evaporative Emissions Canister	Mass Air Flow	Ignition 1				-46.5°
ENGINE		Canister Purge 0 / 30 items selected (Unfiltered)	Spark Advance Close Apply				1 of

- 2. Choose only the data you want to view by checking the box in front of each desired data item.
- 3. Select apply

### Sort Function

ss02491



1. Select Sort to sort data items.



2. Data may be sorted alphabetically, by graph, or by selection (checkbox checked).

Note: Sorting data items will reset the timeline frame counter, so sort these items before recording data. If sorting data while recording the recording will have a period of time where there is no data available.

### Recording

ss02493

©	Data Stream All Data Items		1 1	≅ <u></u> ^+ <b>•</b> ∎• <b>;</b>
CTS CTS Dep CTS	Vehicle Speed	Engine Coolant Temperature	Mileage Since DTC Cleared           125792 milea           22817         8647           14941           Low         Avg           High	Mileage Since MIL           Request           30054           miles           12277         26670           Avg           Low         Avg
	Intake Air Temperature           293           237           7           -24	Fuel Tank Pressure	Calculated Converter Temperature	Fuel Level 18.31 p# 5.05 14.92 22.32 Low Avg High
BNONE	REFERENCE DOL.			55 / 200 Banon 1

- 1. Select the red record button located at the bottom left of screen.
  - When recording the red record button will turn into a check mark.

Current	All Data Items		1 1	≝_ î <b>t '■° i</b>
CTCS CTS CTS CTS CTS CTS CTS CTS CTS CTS	Vehicle Speed           123           nph           22         92           140           Low         Arg           Vehicle Speed           123           nph           22         92           140           Low         Arg           140         High           251         257           36         36	Engine Codant         1           Temperature         205	Micage Since DTC           Ceneral           103443           neas           7855         60040           103443           Low         Args           102402         103443           Low         Args           102402         103443           Low         Args           102402         103443           Low         Low           102402         1832           1832         1832           434         -54	Masse Since ML         i           Propessi         30062           miss         miss           19767         3031           2097         30942           Low         Ang           17.89         μr           15.57         19.88           Low         Ang         158p
	RECORDING LIVE DATA.			S7 tares 1 of

ss02494

2. To stop recording select the check mark

### Recordings

ss02495



- 1. Select Recordings to view previously recorded data streams.
  - · Recordings are listed from newest to oldest. When the folder is full, the newest recording pushes the

oldest one out of the list. Currently, there is no way to manually delete recordings.

- To view recordings, select the Recordings button near the top of the display.
- 2. Select the desired recording.

### **Playback Instructions**

Current	Recorded 2003 Cadillac	Data CTS Lux	Stream			,	- 2	8=	<sup>2</sup> † ) <b>E</b>	° :	
	Vehicle Speed	88 53 mph 32	Engine Coolant Temperature	205 129 36	Cleared Cleared	41578 Avg	C 40622 miles 79187 High	Mileag Reque	e Since MIL st 36191 Avg	35592 miles 39732 High	-
	Intake Air Temperature	126 36 -36	Fuel Tank Pressure	3.6 2.9 inH20 -4.3	Calcula Temper	ited Conver ature	1011 291 7 -54	10.59	15.89	22.99 9 <sup>al</sup> 22.99	-
			L					11/100	tares		

To pause the display select Pause.

- To resume playing the recording, reselect Pause.
- To advance the recording frame-by-frame:

002406

- Select ">".
- Select either "<" or ">".
- To resume playing the recording, select Pause.
- If replay is desired, click and drag the timeline marker back to the beginning of the timeline and release.

# **SPECIAL TESTS**

### **Overview**

Depending on the vehicle and controller selected, special tests are available.

The special test function is a key component to the tool because it allows circuit testing without ever touching a circuit with a DVOM or other electrical testing equipment. This will also protect electrical circuits from being contaminated or damaged from manual testing with electrical troubleshooting equipment. It is also a quick and easy way to test vehicle controller operation which is dicult to test using traditional methods.



1. Select Special Tests from the home screen.

-----

550	2490	
Current O 2007		rests :
Jeep	ALL TESTS	All Special Tests
ingler con 3.8	ACCESS VIN	Search All Special Tests
Wra ed Rubi	DIESEL CONTROLS	Access VIN
Unlimit	DPF TESTS	Read VIN
	EGR TESTS	Write VIN
	ENGINE TESTS	Diesel Controls
	FAN TESTS	Glow Plug
	FUEL TESTS	DPF Tests
		Manual DPF Regeneration
BINE	UTHER TESTS	GR Tests
NA N	OXYGEN SENSOR TES.	EGR Throttle Valve (Service)
	RESET TESTS	

2. At the special test screen select a special test group from the group selection menu, then select the desired special test within the desired test group.

SSU	2499	
Wrangler date date with the set Ruticion 3.8 date of Ruticion 3.8 date o	SPECIAL T	ESTS :
	ALL TESTS	Engine Tests
	ACCESS VIN	Compression Test
	DIESEL CONTROLS	Idle Speed Setpoint
- E	DPF TESTS	
	EGR TESTS	
	ENGINE TESTS	
	FAN TESTS	
	FUEL TESTS	
<sub>4</sub>	OTHER TESTS	
ENGI	OXYGEN SENSOR TESTS	
	RESET TESTS	

3. Only the tests meeting the search criteria are displayed. Select the desired test to be executed. *Note: Some tests may require a registration like Tire Pressure Sensor Test* 

ss02	2500	
Current	SPECIAL TESTS	:
Jeep	Compression Test	
angle con 3.1	Engine Must Not be Running	
Wra	For this test	
Chimib		
BINE		
Ē	Continue	-
	Continue	

4. Follow the prompts on the screen.

ss02501

.....

NOTE: Some of the instruction text may not exactly match what is on the screen. This will be updated as product updates are released.

Current O	SPECIAL TESTS	:
Wrangler Wrimied Rubicon 3.8	Compression Test Fuel to the injectors will be disabled Battery MUST be fully charged The average engine speed should be compared with the cylinder selective engine speeds. If a cylinder has a deviation of more than 6 RPM compared with the average engine speed, there is a high probability that the cylinder has a compression problem. This test should be repeated three times to get a statistical based result.	
ENGINE	Continue Abort	

5. To terminate a test at any time, use the emergency stop button. To exit special tests normally, select the exit or abort button.

Note: Exit or abort will both stop the current special test and take you back to the start of Special Tests

### 800.MACTOOLS

# Note: If there is data streaming attached to the Special Test then you will be taken to Special Tests in Data Stream.

It is possible to change controllers within the special test menu screen after exiting the current test. All features outside the special test are locked out until the test is terminated to protect the vehicle and the person running the special test. If a function outside the special test is desired, terminate the test and proceed to the desired function. Special tests are not available for all vehicles and controllers. The air bag controller will rarely provide special tests, as actuating the air bag would cause damage to the steering wheel or cabin components. It would also be necessary to replace air bag modules after running the test and clean the interior. Special tests will be continuously updated as more are added; in addition, tests which do not function may be removed during updates as well. There may be tests listed that do not function on the selected vehicle. This is likely due to the fact that many vehicles have different systems depending on sub-model types.

Read DTCs Button Definitions					
	Menu Button Tapping the Menu button displays a pop-up link that takes the user to help content related to reading DTCs. <i>Note: an active internet connection will be</i> <i>required.</i>				
2	View Help Selecting View Help will open an online opera- tors manual.				
0	Take Screen Capture Selecting Take Screen Capture will save a copy of the current open screen.				

## 800.MACTOOLS

# **DIAGNOSTIC INFORMATION**

### **Overview**

Diagnostic Information provides diagnostic, repair, and reset information for the selected vehicle.



1. Select Diagnostic Information from the home screen.

© 2007	Diagnostic Inform	nation		!
ngler con 3.8 deer		с ##	<b>(a)</b>	ā (8)
Wra mited Rubi	Code-Assist Library	Direct-Hit®	Repair-Trac®	Symptom Assist
Unlin	C)	►	Ш	á
	Symptom List	Video Library	Drive Cycle	Oil Light Reset
	<b>Q</b>			Î
	PCM Pin	TSB Reference	Trans Pan ID	Location Info
ENGINE	•	✓	ส้า	<b>1</b> 6

2. Select the desired function from within the Diagnostic Information menu.

### AutoDetect Results Number Indication

Diagnostic Information provides diagnostic, repair, and reset information for the selected vehicle.

- Each vehicle and controller will have its own set of indications.
- The indication is displayed on top of the Diagnostic Information selection.
- When entering diagnostic information, the application will conduct a search in the background for the selected vehicle/controller combination to determine the number of items it will contain.

NOTE: If diagnostic information is desired for a different controller or vehicle, return to the Home Screen and change the controller or vehicle there, then re-select Diagnostic Information. Failure to follow this could lead to display errors or communication errors.

NOTE: Not all assets within the Diagnostic Information menu will utilize the AutoDetect Results Number indication feature.

### Code Assist<sup>™</sup> Library

This function will allow a search for DTCs by letter/number designation.



1. Select Code-Assist library from the Diagnostic Information screen.

ss02505

Current O 20007		Ie-Ass	sist Library			I
Wrangler d Rubicon 3.8 date	P00 Codes (9) P01 Codes (14) P02 Codes (7)	> >	P0031 Oxygen Sensor Bank 1 Sensor 1 Heater Circuit Low	P0032 Oxygen Sensor Bank 1 Sensor 1 Heater Circuit High	P0037 Oxygen Sensor Bank 1 Sensor 2 Heater Circuit Low	P0038 02 Sensor 1/2 Heater Circuit High
ENGINE	P03 Codes (10) P04 Codes (13) P05 Codes (7) P06 Codes (9) P07 Codes (8) P08 Codes (1)	> > > >	P0051 C2 Bener 211 Heater Circuit Low P0073 P0073 Antones An Temperature Stensor Canadi High	P0052 C2 Bener 21 Heater Circuit High	P0057 Copyer Sience 2 Benor 2 Header Circuit Low	POSS Copyon Stever Data 2 Benor 2 Heat Heater Circuit High

- The next selection divides the information into subcategories B, C, P and U codes. The next selection divides previous groups even more
- 3. Remaining selections will eventually filter the list down to a shortened DTC list where the user is able to scroll and select the desired DTC
- 4. Select the DTC to display the DTC information.
- 5. To return to previous menu screens, select the back arrows at the top of the screen.

800.MACTOOLS

### Identifix® Direct-Hit®

Identifix® Direct-Hit® requires an account setup with Identifix®. To set up an account, go to www.identifix. com and complete the necessary steps.

Once an account is set up with Identifix®:

- Select Settings button from the home screen.
- Select Direct-Hit® from the available tabs on the left margin of the screen.
- Input the username and password acquired from
- Identifix® by selecting the empty field.
- Using the virtual keyboard, enter required information for both fields.
- Select Save.
- Information saved will be displayed.
- 1. Select Identifix® Direct-Hit® from the Diagnostic Information screen.

ss02506

2006 jeep rims - Google S Google	Direct-Hit Main Asset ×	+\ <b>I</b>
$\leftarrow \rightarrow$ C 🕅 http://www.identifix.com/asse	t_search_main.aspx?LogSL=19&LogDL=29&LogWL=2&L	☆ � ¤
HOME   SEARCH FIXES   SERVICE MANUALS   MAINTENANC	E   QUOTE ESTIMATING   HOTLINE   MY SHOP	BOOKMARKS
Home	Post Fix Can't Find OEM Info? New Vehic	ie   Referral   Logout
X 2003 Cadillac CTS 3.2L, V6, VIN N USA	Users Viewing Cadillac Vehicles: 733	SPX - SPX
SEARCH ALL	ESTIMATING	
[Feyward/Code]         Search           Top Searches         - 522 (2014)           Por This Vehicle         - 162 (2014)           2         - 162 (2014)           3         - 162 (2014)           4         - 162 (2014)           5         - 162 (2014)	MARTENNET OCUTE (MOTOR PARTS & LADOR) CONTON LADOR (MECLLE) FITE Late Lons File Lons File & LORDS FILE & LOR	a
	CHANGE ENGINE OIL message     Reset Procedure - Maintenance Indicator     Vea. Traditional maintenance Schedules     Technicale Plan	

Identifix® Direct-Hit® is now set up for use on the handset. There are a few areas where Identifix® Direct-Hit® may be selected:

- From DTC information screen after having selected Read DTCs from the Home Screen and a listed DTC
- After running an "All DTC Scan" from the "Read DTCs" screen and after having selected a listed DTC in the All DTC Report screen.
- After running an AST from the Read DTCs screen, and after having selected a DTC under the DTC tab at the AST report screen.
- From the "Diagnostic Information" screen, after having selected Diagnostic Information from the Home Screen.

### **Repair Trac®**

Uses the AutoDetect Results Number Indication feature described above.

ss02507

1. Select Repair Trac® from the Diagnostic Information screen to view previously reported repairs for the selected vehicle/controller combination.

Current O	0	Repair-	Trac®	I
Jeep			Systems	
angler con 3.8			Engine Performance	
Wra ted Rubi			Starting and Charging	
Chim				
w				
ENGIN				

Select the desired system.

- Select the category.
- Select the deficiency.
- Select the symptom.
- Report is displayed describing the problem, how to test and fix, and related DTCs.

#### Symptom Assist<sup>™</sup>

This function assists in diagnosing a problem with a vehicle component by selecting apparent symptoms. 1. Select Symptom Assist from the Diagnostic Information screen.

-	+ Symptom Assis	st		
	AIC COMPRESSOR CLUTCH PROBLEM	A/C Compressor C	lutch Problem	
	AIC PERFORMANCE PROBLEM	Element Name	Action Name	Level Name
	ABS PUMP RUNS CONTINUOUSLY	Air Conditioning (A/C) Compressor	Replaced	Top Reported Fix
	ADJUSTABLE PEDAL PROBLEM	Heater Ventilation Air Conditioner	Replaced	Frequently Reported Fixes
	ANTI-LOCK BRAKES/BRAKE/ TRACTION CONTROL LIGHT/ MESSAGE PROBLEM	A/C High Pressure Switch	Replaced	Frequently Reported Fixes
	ANTI-LOCK BRAKES/TRACTION CONTROL - FALSE CYCLING/ FAULTY OPERATION	Ambient Air Temperature (AAT) Sensor	Replaced	Frequently Reported Fixes
וו	AUTOMATIC TRANSMISSION COMMUNICATION PROBLEM	Air Conditioning (A/C) Compressor Clutch	Replaced	Frequently Reported Fixes
	AUTOMATIC TRANSMISSION ENGAGEMENT HARSH/DELAYED	A/C Low Side Pressure Switch	Replaced	Frequently Reported Fixes
	AUTOMATIC TRANSMISSION NOISE/VIBRATION	Air Conditioner (A/C) Pressure Sensor Wiring	Repaired	Frequently Reported Fixes

2. Select the desired component or component group.

ss02508

- 3. Select the desired symptom within the component or component group.
- 4. To go back to previous screens use the back arrows near the top of the screen.

### Symptom List

Diagnostic Information provides diagnostic, repair, and reset information for the selected vehicle.

- 1. Select Symptom List from the Diagnostic Information screen.
  - Displays a list of symptoms associated with the selected vehicle/controller combination.
  - Select Symptoms List from the Diagnostic Information menu.

ss02509

Current O	Symptoms List	: I
JEEP	ENGINE WILL NOT START	Engine Will Not Start
angler con 3.8	ENGINE LOSS OF POWER	
Wr.	ENGINE MISSES ON ACCELERATION	Description Weak battery, corroded or loose battery connections, faulty starter, faulty coll(s) or
ŝ	ENGINE STALLS OR IDLES ROUGH	control unit, incorrect spark plug gap, contamination in fuel system, faulty fuel pump, incorrect engine timing.
	ENGINE MISSES AT HIGH SPEED	
	ENGINE WILL NOT START	
	ENGINE LOSS OF POWER	
	ENGINE MISSES ON ACCELERATION	
BINE	ENGINE STALLS OR IDLES ROUGH	
E	ENGINE MISSES AT HIGH SPEED	

2. Select the symptom that is currently being exhibited by the vehicle on the vehicle.

#### **Video Library**

When Video Library is selected the user will be taken to YouTube videos. These videos will illustrate how to perform various functions on the handset.

1. Select Video Library from the Diagnostic Information screen.

#### ss02510



2. Search YouTube website for videos.

### **Drive Cycle**

The OBDII system has a series of systems that run self-tests. These systems or components have to be made ready either by simply turning on the ignition or by manipulating the system in some manner. This is called Drive Cycle. Drive cycle information is listed for continuous and non-continuous monitors.

1. Select Drvice Cycle from the Diagnostic Information screen.



- 2. Scroll through the list until the desired monitor or drive cycle is found.
- 3. Select the desired drive cycle and follow the instructions.

### **Oil Light Reset**

On newer vehicles, the oil light reset procedure will indicate how the oil life information can be reset after an oil change.

1. Select Oil Light Reset from the Diagnostic Information screen.

ss02512	>
3302312	_

Ourment O 20002	Oil Light Reset	:		
GMC	Oil Light Reset Procedures			
. 1500 SLE 5.3	1) Turn the ignition key to the RUN position.			
kan XI	2) Fully push and release the accelerator pedal 3 times within 5 seconds.			
2	3) If the CHANGE OIL SOON light flashes, the system is resetting.			
	4) Turn the key to OFF.			
	5) Start the vehicle.			
	6) The oil life will change to 100%			
	7) If the Change Oil Soon light comes back on, the system has not reset. Repeat the procedure.			
PCM				

2. Select Oil Light Reset from the Diagnostic Information menu screen.

### **PCM Connector Pin Information**

Displays a list of which connector and pin a component or sensor is received through on the PCM. 1. Select PCM Pin Information from the Diagnostic Information screen.



2. Scroll through the list and select the desired sensor or component is listed.

Current O		1 Pin	Q	:
2003 amc 8 8	PCM Pin			
kon XL 15 SLE	Connector:	C1		
'n,	Pin Number:	1		
	Wire Color: Description:	siacx/white Ground		
	KOER	NANA		
MOM				

#### ss02514

### Technical Service Bulletin (TSB) References

Displays TSBs associated with the vehicle/controller combination.

1. Select TSB Reference from the Diagnostic Information screen.

550/	2515		
Current	TSB Reference		:
GMC			
8 2	TSB Number	TSB Description	
XL 15 SLE	02-09-41-001	Computers & Controls - DTC's Set When Replacing Modules	
Yukon	01-07-30-002C	Electrical - Malfunction Indicator Lamp ON / Automatic Transmission Stuck in 3rd Gear	
	01-07-30-036C	Automatic Transmission - Diagnostic Trouble Code P0756 Diagnostic Tips	
	01-07-30-038B	Automatic Transmission - 4L60-E / 4L65-E Malfunction Indicator Lamp ON / Diagnostic Trouble Code P0757 / Slipping	
	02-06-05-004A	Emissions - Catalytic Converter Damage / Misfire Codes Set	
	02-07-30-001C	Automatic Transmission - 4L60E and 4L65E Diagnostic Trouble Code P0894 / P1870 Diagnostics	
	03-04-21-001D	Drivetrain - 4x4 Inoperative / Lamp Flashing / Diagnostic Trouble Code's Set	
POM	03-06-04-030	Fuel System - Possible Malfunction Indicator lamp ON / Driveability Symptoms	

2. Scroll through the list until the desired TSB is found

### **Trans Pan ID**

Displays a list of gasket images that correspond to specific transmissions.

1. Select Trans Pan ID from the Diagnostic Information screen.



2. Scroll through the list of gasket images until the matching gasket is found. Corresponding information is listed below each image.

# 800.MACTOOLS

### Location

Used to find where specific components are located.

1. Select Location Info from the Diagnostic Information screen.

ss02517

Current O 2004	Location	I
Ford	FUSE BOX LOCATION	Battery junction box is located in the left rear engine compartment. The central junction box is located under the dash panel, pear the steering column
F-150 XL 54	ECU LOCATION	
	DLC LOCATION	
	COMPONENT LOCATION	
(S		
BS (RAB		
8		

2. Scroll through the list and select the desired component.

#### Brake Bleed Procedure (ABS)

Provides the procedure on how to bleed the brakes after replacing brake calipers or opening a brake line to atmosphere.

1. Select Brake Bleed Procedure from the Diagnostic Information screen.

ss02518

Current				
Ö	Brake Bleed Procedure			
ZUU4 Ford	ABS Bleed Procedures			
F-150 XL5.4	Brake Bleed Sequence: N/A			
	GRAVITY BLEED			
	<ol> <li>Warning: brake fluid contains polyglycol ethers and polyglycols. Avoid contact with eyes. Wash hands throughly after handling. If brake fluid contact eyes, flush eyes with running water for 15 minutes.</li> </ol>			
	2) Get medical attention if irritation persists. If taken internally, drink water and induce vomiting. Get medical attention immediately. failure to follow these instructions may result in personal injury.			
	3) CAUTION: Do not allow the brake master cylinder reservoir to run dry during the bleeding operation. Keep the brake master cylinder reservoir filled with the specified brake fluid. Never reuse the brake fluid that has been drained from the hydraulic system			
(SBS)	4) CAUTION: Do not spill brake fluid onto painted or plastic surfaces. If spilled, wipe away immediately before damage to the plastic or painted surfaces occurs.			
i) SBV	5) NOTE: When any part of the hydraulic system has been disconnected for repair or new installation, air may get into the system and cause spongy brake pedal action.			

2. It may be necessary to change controllers at the Home Screen, then re-enter diagnostic information for this selection to become available (ABS, ABS/VSES).

NOTE: The sequence may be contained within the previous brake bleed procedure section if it is not separately listed on the Diagnostic Information screen.

### **Tune Up Specifications**

Provides specifications for specific components when a tune up is performed.

1. Select Tune Up Specs from the Diagnostic Information screen.



- 2. Some of the tune up specifications contained in this section include the following:
  - Starter
  - Generator
  - Regulator
  - Spark plug
  - Idle speed
  - Fuel pressure
  - Compression
  - Firing order

### **Key Programming**

Displays instructions for the selected vehicle for programming a key.

1. Select Key Programming from the Diagnostic Information screen.



O	🖁 Key Pr	ogramming
2004 Ford	Battery Location	Remote Alarm/Central Locking
o		System Operation
12	Battery Replacement	Pressing the LOCK button once locks all doors and activates the alarm system (if fitted).
ш́×		Pressing the LOCK button twice within 3 seconds confirms all doors locked by sounding the horn once. The horn will sound twice if a door is open
	Immobilizer	Pressing the UNLOCK button once deactivates the alarm system (if fitted) and unlocks the driver's door only.
		Pressing the UNLOCK button twice within 3 seconds deactivates the alarm system (if fited) and unlocks all doors.
	1 19107844	Pressing the panic button once activates the panic alarm. The horn will sound and the parking lamps will flash
		Pressing the panic button agiain, of turning ignition ON deactivates the panic alarm.
	;−€ <u>T</u> ,;−€ <u></u> F;	Programming
		When
		Remote transmitter added or replaced.
		System Malfunction.
		How
		Obtain all remote transmitters.
8		Switch ignition from OFF to ON 8 times within 10 seconds:
l é		Doors should lock then unlock.
ABS		Within 20 seconds:
		Press any button on the first remote transmitter.
		Doors should lock then unlock.

2. Follow the prompts on the screen to program a key and or replace battery in key.

### **Battery Disconnect**

Displays procedures for disconnect the battery on the selected vehicle.

1. Select Battery Disconnect from the Diagnostic Information screen.

©	Battery	Disconnecta	
004 Ford	Battery Location	Battery Location	
XL 5.4	General Information	See illinge	
	Before Battery Disconnection		
	Before Battery Connection		
	122440 PCCO		
-			
SABS)			
ABS			

- 2. Follow the prompts on the screen to disconnect and reconnect the battery.
- 3. Follow procedures for updating vehicle systems after battery has been disconnected.

### **TMPS Quick Info**

Describes the operating procedures for the Tire Pressure Monitor System (TPMS) for the selected vehicle. 1. Select TMPS Quick Info from the Diagnostic Information screen.

#### ss02522

Current	(I) TPMS Quick Information				
2009 Honda	DESCRIPTION	Description			
Accord LX 2.4	RESET PROCEDURES	Sustam Description: When the vahicle speed exceeds 28 mph (45 km/h), the Tire Pressure			
	RESET TRIGGER	Monitor System (TPMS) Control Unit monitors the pressure in all four tires and the system itself. System Operation: The TPMS has two LED indicators that are part of the gauge			
	TORQUE SPECS	module; a low-pressure indicator and a system indicator. When the TPMS Control Unit detects low pressure in a tire (or a problem in the system) it turns on the appropriate indicator(s). If low tiny pressure is detected the low pressure indicator comes on. If a			
ABS (HONDA)	TPMS SENSOR PART NUMBER	noblam (b) the system is detected, the TPMS indicator connects the value pressure and a problem in the system are detected, only the TPMS indicator connects. If you tile pressure and a problem in the system are detected, only the TPMS indicator connects on. With the system functioning property, the low pressure indicator should come on when the ignition is turned ON. I should here go off 2 seconds later if this is no the case, there is a problem with the system. If the system detects low pressure in any tire, the low-pressure indicator will come on and the TPMS control unit will set on of the following codes: DT (1 JD C1 3), DT (5 and DTC 17. When the tire pressure returns to normal, the control unit will turn off the indicator but done the DTC. (1 the control unit detects a problem with the system while a low-pressure problem exists, it will turn off the tire pressure indicator, store the DTC(3) and DTC (32, 34, 36 or 36 depending on the tire) because the system is no none or maid set a DTC (32, 34, 36 or 36 depending on the tire) because the system is no honor mexistion.			
		to complet recovery larger and the state as a sublimited. There are to default of behaviors in the Sparse time so this is not an indication of a problem with the sparse. Component Description: The TPMS uses the following components: Control Unit, Indicators and Tire Pressure Sensors. These components work foughten to monitor and port time pressure wherever the vehicle			

2. Follow the prompts on the screen to reset the tire pressure monitors.

Read DTCs Button Definitions				
	Menu Button Tapping the Menu button displays a pop-up link that takes the user to help content related to reading DTCs. <i>Note: an active internet connection will be</i> <i>required.</i>			
?	View Help Selecting View Help will open an online opera- tors manual.			
0	Take Screen Capture Selecting Take Screen Capture will save a copy of the current open screen.			

# MAINTENANCE TESTS

### Overview

Maintenance Tests provide a way for specific systems to be recalibrated or reset after service. Maintenance test availability will vary from vehicle to vehicle, and will be updated over time.

Maintenance tests are the same as special tests, but this is a shortcut to most frequently used tests on the selected vehicle. These specific tests can also be found

under special tests.

Maintenance tests can be selected at the time of controller selection for the current vehicle being worked on. ss02525



1. Select Maintenance Test from the Home Screen.



#### 2. Select the controller.

Note: If no maintenance tests are found for selected vehicle select a different controller.



3. Select the desired category for the component or system being worked on. *Note: If there are no sub-sections available for the selected category go to step 5.* 



4. Select the desired test to be performed.



5. Follow prompts on the screen.

Ģ		▼⊿ 🖁 2:59
Active O	Search Google for	
Jeep	Read DTCs Data Stream Data Str	
2007 Jeep Wangler Unimited	Maintenance Tests	
Engine	Automated System Test Veiw Saved Tests Veiw Saved Tests	
OBD-II		
Select Vehicle	Tue, 10 May 2016	
		0.

6. Select Special Tests from the Home Screen.

ss02	ss02530					
Current O 2000	SPECIAL TESTS		I			
Jeep	ALL TESTS	All Special Tests				
ngler on 3.8	ACCESS VIN	Search All Special Tests	_ Q			
Wra	DIESEL CONTROLS	Access VIN				
	DPF TESTS	Read VIN				
	EGR TESTS	Write VIN				
	ENGINE TESTS	Diesel Controls				
	FAN TESTS	Glow Plug				
		DPF Tests				
8	FUEL IESIS	Manual DPF Regeneration				
WISSI	OTHER TESTS	FGR Tosts				
O TRANS (02)	OXYGEN SENSOR TESTS	EGR Throttle Valve (Service)				
AUT	RESET TESTS					

7. At the special test screen select a special test group from the group selection menu, then select the desired special test within the desired test group.

Note: For more information refer to Special Tests section.

## 800.MACTOOLS

# ALL SYSTEM DTC SCAN

### **Overview**

The All System DTC Scan will scan all available controllers on the selected vehicle.

Depending on the vehicle, the handset may ask qualifying questions concerning particular controller types for the vehicle being scanned. If unsure what selection to pick find the manufacturer's Regular Production Option (RPO) Code list sticker on the vehicle, then find the corresponding code for the desired controller. Typical locations for the RPO are the trunk, glove box, or doorjamb area.

These questions may be skipped by selecting Skip Controller. Scan progress will be indicated by the progress bar near the bottom of the screen.



1. Select All System DTC Scan from the Home Screen.



### ss02532

ss02531

2. Select all controller qualifiers Note: Not all vehicles will have qualifiers



3. Scan progress will be indicated by the progress bar in the middle of the screen. *Note: If any of the conrollers have DTC's go to step 6.* 



angle

4. Wait for scan to finish.

Note: There is no arrow beside controller without a DTC and clicking on that line does nothing.

© 2004	All System DTC Scan	<	:
Volkawagon	Primary Controller ENGINE		
assat LS2.8	No Diagnostic Trouble Codes	Read	Codes
6.0	Secondary Controller TRANSMISSION		
	Error Communication Error. Please verify that cables are	Read	Codes
	Secondary Controller ABS		
	No Diagnostic Trouble Codes	Read	Codes
	<ul> <li>Secondary Controller CABIN COMP NODE (TPMS)</li> </ul>		
	No Diagnostic Trouble Codes	Read	Codes
	<ul> <li>Secondary Controller WIRELESS CTRL MODULE (TPMS)</li> </ul>		
ENGINE			

5. The controller without a DTC has no DTC line that is selectable and clicking on the line has no effect.





6. Wait for scan to finish.

Note: There is no arrow beside controller without a DTC and clicking on that line does nothing \$\$\$02537

Current O 2004	All System DTC Scan	<	:
Z004 Volkswagon	<ul> <li>Primary Controller AUTO TRANSMISSION (02)</li> </ul>		
ssat s 2.8	00258 Solenoid Valve 1	Read C	odes
Ba	00260 Solenoid Valve 2	Read C	odes
	00266 Solenoid Valve 5	Read C	odes
	Secondary Controller ENGINE (01)		
	18080 Coolant Fan Control 1v Open Or Short To Ground	Read C	odes
	18359 Radiator Fan 2 Movement Restricted/Jammed	Read C	odes
	16394 Camshaft Position A Actuator Circuit (Bank 1)	Read C	odes
	16395 Camshaft Position A - Timing Over-Advanced Or System Performance (Bank 1)	Read C	odes
UNISSIO1	16396 Camshaft Position A - Timing Over-Retarded (Bank 1)	Read C	odes
(02)	<ul> <li>Secondary Controller AIRBAG (15)</li> </ul>		
AUTOT	00003 Control Module	Read C	odes

- 7. DTCs will be read from all available vehicle controllers.
  - Select a listed DTC for Related Diagnostic Information See Diagnostic Information section
  - If a DTC has Code Criteria available there will be an "\*" next to the DTC.

Once completed the handset will display a list of all the DTCs found on the vehicle and group them by controller. If the handset was unable to communicate with a controller, it will be indicated under the specific controller. Communication problems on certain controllers may be attributed to the vehicle not having that controller. Controllers are sometimes listed for a particular vehicle that do not actually exist.

Read DTCs Button Definitions			
2	Refresh DTCs Button Tapping the Refresh button initiates a fresh scan of DTCs from the vehicle.		
<	Share DTCs Button Tapping the Share button opens the app and initiates one of two options, share by email or Bluetooth email concontaining a list of all the DTCs set.		
	Menu Button Tapping the Menu button displays a pop-up link that takes the user to help content related to reading DTCs. <i>Note: an active internet connection will be</i> <i>required.</i>		
?	View Help Selecting View Help will open an online opera- tors manual.		
.0	Take Screen Capture Selecting Take Screen Capture will save a copy of the current open screen.		

# BROWSER

### Overview

An internet browser window is available for direct internet access.



1. Select Browser from the Home Screen.

The Handset will launch the internet browser. Links to common technical and repair websites are provided. Select the keyboard icon to input text.

Note: The handset will need to have a Wi-Fi connection.

### **CONNECTING TO WI-FI NETWORKS**

See Android Settings for more information on setting up and connecting to a wireless network.

ss02539



1. Select Tech Communites brings up appropriate tech community web page.

Video Search FastTou	uch Repair Inform X +		1
OIC (f) (m) (t)			
Fast Touch Websites		Mitchell]	
TECH COMMUNITIES			
REPAIR INFORMATION			
	⊅⊿autodata	MOTOLOGIC	
OEM			
-			

2. Select Repair Information brings up appropriate repair information web page.

#### ss02541

Video Search FastTou	ch OEM × \+		I
Fast Touch Websites	Star Star	Jeep	
		Ø	θ

3. Select OEM brings up the manufactures technical web page.

# **AUTOMATED SYSTEM TEST**

### **Overview**

The Automated System Test (AST) will scan all available controllers on the selected vehicle for Modes 1-7. Depending on the vehicle, the handset may ask qualifying questions concerning particular controller types for the vehicle being scanned. If unsure what selection to pick, find the manufacturer's Regular Production Option (RPO) code list sticker on the vehicle, and then find the corresponding code for the desired controller. Typical locations for RPO are trunk, glove box, or doorjamb. These questions may be skipped by selecting Skip Controller.



1. Select Automated System Test from the Home Screen.





2. Wait for the list to be completed



ss02545



3. Scan progress will be indicated by the progress percentage bar on the screen.



4. Scan progress will be indicated by the progress percentage bar on the screen.

• Select Green Arrow to review summary report (step 6)



5. If available select arrow at end of line to view information on item.

NOTE: Available items will vary from vehicle to vehicle.

### **Summary Report**

ss02547

Current	Automated Report	System Test		© < 1			
Jeep	SUMMARY	Summary					
/rangle	DTCs	VIN: 1960M57N530102274 CONTROLLER: ENGINE					
ted R	DATA STREAM SNAPSHOT	CALIBRATION ID(S):BOSCHA10373669	CALIBRATION ID(S):BOSCHA1037368956, 4EF7033C				
Unlin	MODE 1	DTCs Found	Data Items	Freeze Frame Data (Mode 2)			
	FREEZE FRAME	108	12	11			
	MODE 5	Oxygen Sensor Tests (Mode 5)	Non Continuously Monitored Tests (M	ode 6)			
	MODE 6	80 3 Passed 9 Failed					
ENGINE		Readiverse Monitor Tests (Mode 1) 6 Ready 0 Not Ready 5 Not Supported					

AST summary reports items found on the vehicle, such as:

- Controllers found on vehicle
- DTCs
- Data Stream Snap Shot
- Mode 1 (Readiness Monitor)
- Freeze frame
- Mode 5 (02 sensor)
- Mode 6 (Non-continuous monitor tests)

NOTE: Available selections will vary from vehicle to vehicle.

### DTCs



DTCs recorded are displayed. When selecting DTCs, diagnostic information is also available (same information as the Read DTCs screen).

### **Data Stream Snapshot**

ss025	549

Current O 2007	Automated Report	System Test		<b>२</b> ४ ।
Jeep	SUMMARY	Data Stream Snapshot		
Wrangler ited Rubicon 3.5	DTCs	Global OBDII		
uhim	MODE 1	Engine Coolant Temperature	Distance Since DTC Clear	Fuel Rail Pressure Gauge
	FREEZE FRAME	00	21012	70.4
	MODE 5	90 ≆	31042 miles	7U.1 psi
	MODE 6	Distance MIL Active	Fuel Rail Pressure Relative To Manifold Vacuum	Evaporative Emissions System Vapor Pressure
ENGINE		19502 miles	144.3 psi	-236.54 Hg
		Catalyst Temperature Bank 1 Sensor 1	Catalyst Temperature Bank 2 Sensor 1	Catalyst Temperature Bank 1 Sensor 2

Data stream Snapshot, is a current view of the onboard vehicle sensors.

#### Mode 1 (Readiness Monitor)

Ourrent	Automated Report	System Test		ø	<	:
Jeep	SUMMARY	Readiness (Mode 1)				
fanglei bioon 3.6	DTCs	Monitor Description	Status			
M Inited Ru	DATA STREAM SNAPSHOT	Catalyst Monitor	Ready			
15	MODE 1	Misfire Monitor	Ready			
	FREEZE FRAME	2nd Air Monitor	Ready			
	MODE 5	Evaporative Emissions Monitor	Not Supported			
	MODE 6	Comprehensive Component Monitor	Ready			
		Fuel System Monitor	Ready			
¥		Heated Catalyst Monitor	Not Supported			
ENGI		A/C System Refrigerant Monitor	Ready			
		Oxygen Sensor Monitor	Not Supported			

ss02550

Readiness Monitor Tests displays the results from the continuous monitors available on the selected vehicle. There are three states: ready, not ready, and not supported. If the monitor is not ready, a drive cycle must be completed prior to running this test. For more information regarding drive cycles, refer to diagnostic functions Mode 1 readiness.

### **Freeze Frame**

ss02551

Current	Automated Report	System Test 🗢 🛠 🚦
Wrangler ed Rubicon 3.8	SUMMARY	Mode 2 Freeze Frames
	DTCs	
	DATA STREAM SNAPSHOT	Freeze Frame 0 - P0123
, mile	MODE 1	
	FREEZE FRAME	
	MODE 5	
	MODE 6	
ENGINE		

#### 1. Select a frame.



Mode 2 displays recorded data in the form of a DS snapshot by the vehicle's computer when specific DTC are set and the MIL is illuminated.
### Mode 5 (Oxygen sensor tests)

Mode 5 views O2 sensor monitor test results.

Automa Report	ed System Test			ø	< i		
SUMMARY	Oxygen Sensor Tests (Mod	Dxygen Sensor Tests (Mode 5)					
DTCs			Malua		11		
DATA STREAM SNAPSI	OT Bank 1 Sensor 1	MIN	value	max	Units		
MODE 1	High Sensor Voltage For Switch Time Calculation	0.000	0.003	1.275	v		
FREEZE FRAME	Lean To Rich Sensor Switch Time	0.000	0.002	1.020	sec		
MODE 5	Lean To Rich Sensor Threshold Voltage	0.000	0.003	1.275	v		
MODE 6	Low Sensor Voltage For Switch Time Calculation	0.000	0.003	1.275	v		
	Maximum Sensor Voltage For Test Cycle	0.000	0.003	1.275	v		
	Minimum Sensor Voltage For Test Cycle	0.000	0.003	1.275	v		
	Rich To Lean Sensor Switch Time	0.000	0.002	1.020	sec		
	Rich To Lean Sensor Threshold Voltage	0.000	0.003	1.275	v		

Mode 5 views O2 sensor monitor test results. Mode 5 displays the average of the O2 sensor monitor test results measured over a period of time. The parameters of this measurement vary between manufacturers. It may be necessary to run the vehicle for a period of time to allow the O2 sensors to fully warm up and begin operating. *Note: Mode 5 is not supported on all vehicles.* 

### Mode 6 (Non-continuous monitor tests)

Mode 6 views onboard monitoring test results for noncontinuous monitor systems.

#### ss02554

Current	Automated Report	System Test				ø	<	:
Jeep	SUMMARY							
angler icon 3.8	DTCs	(Mode 6)						
Wr ited Rut	DATA STREAM SNAPSHOT	ECU: ENGINE						
minu	MODE 1	TID 1 TID 1			Passed			
	FREEZE FRAME	CID 1 TID 1						
		N/A MIN	14080 VALUE	27283 MAX	N/A UNITS			
	MODE 5	TID 2 TID 2			Failed			
	MODE 6	CID 2 TID 2						
		N/A MIN	42117 VALUE	18690 MAX	N/A UNITS			
		TID 3 TID 3			Failed			
ENGINE		CID 3 TID 3						
		N/A MIN	8589 VALUE	1622 MAX	N/A UNITS			
		TID 4 TID 4			Failed			

Non-Continuous Monitor Tests (Mode 6) are pass/fail tests, including certain EVAP tests, catalyst, and EGR. The following information is reported:

- ECU.
- TID (test identification) indicates the system monitor.
- CID (component identification) indicates the component tested and its test value.
- Minimum value, maximum value, and current value for each non-continuous monitor.
- Pass or fail test result.

Each vehicle manufacturer assigns a code number to their system monitors and components. Refer to the vehicle manufacturers Mode 6 code chart to determine the failure indicated by the TID and CID. If this chart is not readily available, run an automated system test (AST) from the DTC screen and select Mode 6. See Read DTCs section for more information regarding steps to complete this action. This may provide a more detailed description of the Mode 6 test information.

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Automated System Test (AST) Button Definitions						
2	Refresh DTCs Button Tapping the Refresh button initiates a fresh scan of DTCs from the vehicle.					
Ś	Share DTCs Button Tapping the Share button opens the app and initiates one of two options, share by email or Bluetooth email containing a list of all the DTCs set.					
	Menu Button Tapping the Menu button displays a pop-up link that takes the user to help content related to reading DTCs. <i>Note: an active internet connection will be</i> <i>required.</i>					
2	View Help Selecting View Help will open an online opera- tors manual.					
0	Take Screen Capture Selecting Take Screen Capture will save a copy of the current open screen.					

# **Overview**

The View Saved Tests functions allows the capability to recall previously run tests.



1. Select Veiw Saved Tests from the Home Screen.

ss02556



2. Navigate down to the desired saved test.

Note: Might require selecting multiple directories.

ss02557

	File picke	er						ta	4
A	storage	emulated		data	com.bosch.mrst_launcher.control.fragment	files	reports		
6	dtcRepor 14/03/2016	t-20160314 12:47 pm	124713.	html				2.94	кв
6	dtcRepor 14/03/2016	t-20160314 12:47 pm	124722	html				2.94	кв
6	dtcRepor 14/03/2016	t-20160314 12:48 pm	124806.	html				2.94	кв
Filer	name							Pick	file

3. Select Specfic file and hit Pick File.

#### ss02558

Marvel's Captain America W Webpage not a	vallable V 🔯 192.19.253.11:8081/ma V	ESi[tronic] Web dtcReport-201603	14124_ × +	1					
← → C 🖸 file:///storage/emulated/0/data/com.bosch.mrst_launcher.control.fragment/files/reports/dtcReport-20160314124713.h1 🕁 🤇									
DTC Report									
Vehicle Information									
2007 Jeep Wrangler Unlimited Rubic	on 3.8 ENGINE								
B1000	B1001	B1002							
Air Conditioning Switch Request Input Circuit/Performance	Air/Conditioning Switch Request Input Circuit/Low	Air Conditioning Switch Request Input Circuit/High							
Active	Active	Active							
B1000	B1001	B1002							
Air Conditioning Switch Request Input Circuit/Performance	Air/Conditioning Switch Request Input Circuit/Low	Air Conditioning Switch Request Input Circuit/High							

4. View results from save test.

# 800.MACTOOLS

## **Overview**

The View Data Stream Recordings allows the capability to review previously recorded data.



1. Select View Data Stream Recordings from the Home Screen.

ss02560

Active	Search Google for	▼⊿ 🛙 2:59
2007 Jeeg Wangler Uchimind Engine	Read DTCs Read DTCs Data Stream Data Stream Automated System Automated System Termine Automated System Termine Termine Automated System Termine Automated System Termine	
OBD-II	Tup 10 May 2016	
Select vehicle		0

2. Select recording.

Note: To delete recording, swipe left and click Delete.

#### ss02561



3. View recording

# **Overview**

System Wiring Diagrams provides OEM specific, Full color, Full system diagrams.



1. Select System Wiring Diagrams from the Home Screen.

ss02595				
C Fast Touch Websites			:	_
← → C @ http://siuv	mc1235.de.bosch.com/nawd-client/app/app/#/11aa3a9c-59bc-81d5-94du-8/ta/e39c396/circuitdiagrams/a1	ਸ਼_	4	4
Wiring Diagrams	Belociado velición: 2015 / Nesan / Titan / 5.6L (Naturally Aspirated)	BO	SCH	I
Wiring Diagrams				
Menu «	Y Eiter displayed text			
Wiring Diagrams	Air Conditioning: Automatic AIC Circuit			٦
System	Air Conditioning: Manual A/C Circuit/2 Control Dial System			ī
AI	Air Conditioning: Manual A/C Circuitt3 Control Dial System W/ VBC			ī
	Anti-lock Brakes			ī
	Anti-theft: Forced Entry Circuiti Crew Cab			ī
	Anti-theft: Forced Entry Circuit King Cab			j
	Anti-theft: Immobilizer Circuit			j
	Body Computer			j
	Computer Data Lines			ĩ

2. Select a wiring diagram to view.

#### ss02596



3. Use navigation buttons located on the left side of the screen to zoom and rotate wiring diagram.

# **CUSTOMER SUPPORT**

### **Technical Support**

For technical questions on your product, contact 800.MACTOOLS, and select the option for technical support.

### **Order Information**

Contact your local Mac Tools Distributor for replacement parts and accessories.

### **Repair Service**

Please contact Technical Support for troubleshooting and service options before sending any unit in for repair. To send a unit in for repair, please call 800.MACTOOLS or contact your local Mac Tools Distributor.



# **CUSTOMER SERVICE**

We at Mac Tools are committed to our customers, please reference the following phone number for a direct contact to one of our customer technicians. They will be more than happy to help with any service or warranty questions you may have about your power tool.

Mac Tools 505 North Cleveland Avenue Suite 200 Westerville, Ohio 43082 800.MACTOOLS MACTOOLS.COM