







### SAFETY FIRST!

This manual describes common test procedures used by experienced service technicians. Many test procedures require precautions to avoid accidents that can result in personal injury, and/or damage to your vehicle or test equipment. Always read your vehicle's service manual and follow its safety precautions before and during any test or service procedure. **ALWAYS** observe the following general safety precautions:



When an engine is running, it produces carbon monoxide, a toxic and poisonous gas. To prevent serious injury or death from carbon monoxide poisoning, operate the vehicle **ONLY** in a **well-ventilated** area.



To protect your eyes from propelled objects as well as hot or caustic liquids, **always** wear **approved** safety eye protection.



When an engine is running, many parts (such as the coolant fan, pulleys, fan belt etc.) turn at high speed. To avoid serious injury, always be aware of moving parts. Keep a safe distance from these parts as well as other potentially moving objects.



Engine parts become very hot when the engine is running. To prevent severe burns, avoid contact with hot engine parts.



Before starting an engine for testing or trouble-shooting, make sure the parking brake is engaged. Put the transmission in **park** (for automatic transmission) or **neutral** (for manual transmission). Block the drive wheels with suitable blocks.



Connecting or disconnecting test equipment when the ignition is **ON** can damage test equipment and the vehicle's electronic components. Turn the ignition **OFF** before connecting the Code Reader to or disconnecting the Code Reader from the vehicle's Data Link Connector (DLC).



To prevent damage to the on-board computer when taking vehicle electrical measurements, always use a digital multimeter with at least 10 megOhms of impedance.



The vehicle's battery produces highly flammable hydrogen gas. To prevent an explosion, keep all sparks, heated items and open flames away from the battery.



Don't wear loose clothing or jewelry when working on an engine. Loose clothing can become caught in the fan, pulleys, belts, etc. Jewelry is highly conductive, and can cause a severe burn if it makes contact between a power source and ground.

## VEHICLES COVERED

The Scan Tool is designed to work on all OBD2 compliant vehicles. All 1996 and newer vehicles (cars and light trucks) sold in the United States are OBD2 compliant. This includes all Domestic, Asian and European vehicles.

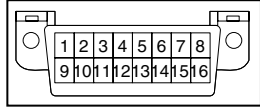
Some 1994 and 1995 vehicles are OBD2 compliant. To find out if a 1994 or 1995 vehicle is OBD2 compliant, check the following:

1. **The Vehicle Emissions Control Information (VECI) Label.** This label is located under the hood or by the radiator of most vehicles. If the vehicle is OBD2 compliant, the label will state “**OBD II Certified.**”

VEHICLE EMISSION CONTROL INFORMATION			
VEHICLE MANUFACTURER	ENGINE FAMILY	EFN2.6YBT2BA	OBD II CERTIFIED
	DISPLACEMENT	2.6L	
THIS VEHICLE CONFORMS TO U.S. EPA AND STATE OF CALIFORNIA REGULATIONS APPLICABLE TO 1999 MODEL YEAR NEW TLEV PASSENGER CARS.			
REFER TO SERVICE MANUAL FOR ADDITIONAL INFORMATION			
TUNE-UP CONDITIONS: NORMAL OPERATING ENGINE TEMPERATURE, ACCESSORIES OFF, COOLING FAN OFF, TRANSMISSION IN NEUTRAL			
EXHAUST EMISSIONS STANDARDS		STANDARD CATEGORY	
CERTIFICATION IN-USE		TLEV	
		TLEV INTERMEDIATE	
SPARK PLUG TYPE NGK BPRE-11 GAP: 1.1MM	CATALYST	[Barcode]	

**OBD II CERTIFIED**

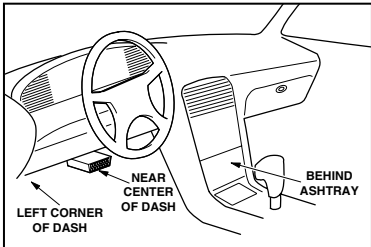
2. Government Regulations require that all OBD2 compliant vehicles must have a “common” sixteen-pin **Data Link Connector (DLC)**.



*Some 1994 and 1995 vehicles have 16-pin connectors but are not OBD2 compliant. Only those vehicles with a Vehicle Emissions Control Label stating “OBD II Certified” are OBD2 compliant.*

### Data Link Connector (DLC) Location

The 16-pin DLC is usually located under the instrument panel (dash), within 12 inches (300 mm) of center of the panel, on the driver’s side of most vehicles. It should be easily accessible and visible from a kneeling position outside the vehicle with the door open.



*On some Asian and European vehicles the DLC is located behind the “ashtray” (the ashtray must be removed to access it) or on the far left corner of the dash. If the DLC cannot be located, consult the vehicle’s service manual for the location.*









































### BEFORE YOU BEGIN

Fix any known mechanical problems before performing any test. See your vehicle's service manual or a mechanic for more information. Check the following areas **before** starting any test:

- Check the engine oil, power steering fluid, transmission fluid (if applicable), engine coolant and other fluids for proper levels. Top off low fluid levels if needed.
- Make sure the air filter is clean and in good condition. Make sure all air filter ducts are properly connected. Check the air filter ducts for holes, rips or cracks.
- Make sure all engine belts are in good condition. Check for cracked, torn, brittle, loose or missing belts.
- Make sure mechanical linkages to engine sensors (throttle, gearshift position, transmission, etc.) are secure and properly connected. See your vehicle's service manual for locations.
- Check all rubber hoses (radiator) and steel hoses (vacuum/fuel) for leaks, cracks, blockage or other damage. Make sure all hoses are routed and connected properly.
- Make sure all spark plugs are clean and in good condition. Check for damaged, loose, disconnected or missing spark plug wires.
- Make sure the battery terminals are clean and tight. Check for corrosion or broken connections. Check for proper battery and charging system voltages.
- Check all electrical wiring and harnesses for proper connection. Make sure wire insulation is in good condition, and there are no bare wires.
- Make sure the engine is mechanically sound. If needed, perform a compression check, engine vacuum check, timing check (if applicable), etc.

### VEHICLE SERVICE MANUALS

Always refer to the manufacturer's service manual for your vehicle before performing any test or repair procedures. Contact your local car dealership, auto parts store or bookstore for availability of these manuals. The following companies publish valuable repair manuals:

- **Haynes Publications** - 861 Lawrence Drive, Newbury Park, CA 91320 Phone: 800-442-9637 Web: [www.haynes.com](http://www.haynes.com)
- **Mitchell 1** - 14145 Danielson Street, Poway, CA 92064 Phone: 888-724-6742 Web: [www.m1products.com](http://www.m1products.com)
- **Motor Publications** - 5600 Crooks Road, Suite 200 , Troy, MI 48098 Phone: 800-426-6867 Web: [www.motor.com](http://www.motor.com)

### FACTORY SOURCES

Ford, GM, Chrysler, Honda, Isuzu, Hyundai and Subaru Service Manuals

- **Helm Inc.** - 14310 Hamilton Avenue, Highland Park, MI 48203 Phone: 800-782-4356 Web: [www.helminc.com](http://www.helminc.com)

## CODE RETRIEVAL PROCEDURE

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

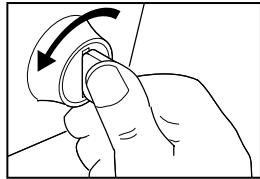


*Check your vehicle thoroughly before performing any test. See **Preparation for Testing** on page 24 for details.*



**ALWAYS** observe safety precautions whenever working on a vehicle. See **Safety Precautions** on page 2 for more information.

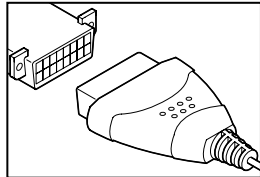
1. Turn the ignition off.
2. Locate the vehicle's 16-pin Data Link Connector (DLC). See page 3 for connector location.




3. Connect the Scan Tool's cable connector to the vehicle's DLC. The cable connector is keyed and will only fit one way.

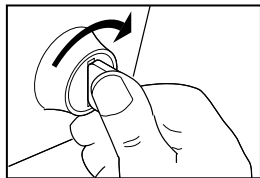
- If you have problems connecting the cable connector to the DLC, rotate the connector 180° and try again.

If you still have problems, check the DLC on the vehicle and on the Scan Tool. Refer to your vehicle's service manual to properly check the vehicle's DLC.



- After the Scan Tool's test connector is properly connected to the vehicle's DLC, the Vehicle icon  should display to confirm a good power connection.

4. Turn the ignition on. **DO NOT** start the engine.
5. The Scan Tool will automatically turn ON.



- If the unit does not power on automatically when connected to the vehicle's DLC connector, it usually indicates there is no power present at the vehicle's DLC connector. Check your fuse panel and replace any burned-out fuses.
- If replacing the fuse(s) does not correct the problem, consult your vehicle's repair manual to identify the proper computer (PCM) fuse/circuit, and perform any necessary repairs before proceeding.











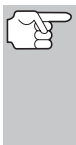


The Scan Tool is a special tool that communicates with the vehicle's computer. The Scan Tool lets you view and/or "capture" (record) "real-time" Live Data. This information includes values (volts, rpm, temperature, speed etc.) and system status information (open loop, closed loop, fuel system status, etc.) generated by the various vehicle sensors, switches and actuators.

In effect the Scan Tool lets you view, in "real time", the same signal values generated by the sensors, actuators, switches and/or vehicle system status information used by the vehicle's computer when calculating and conducting system adjustments and corrections.


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

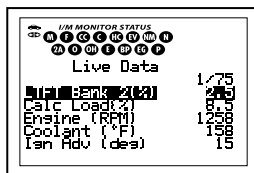
Each PID (sensor, actuator switch, status, etc.) has a set of operating characteristics and features (parameters) that serve to identify it. The Scan Tool displays this information for each sensor, actuator, switch or status that is supported by the vehicle under test.




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

## VIEWING LIVE DATA

1. Follow steps 1 through 7 of the CODE RETRIEVAL PROCEDURE (page 25) to place the Scan Tool in "Code Retrieval" mode. Start the engine.
2. Press and release the **LD/ENTER**  button to place the Scan Tool in "Live Data" mode.
3. Real-time Live Data (PID) information supported by the vehicle under test displays.



Remember, what you are viewing is "real-time" Live Data. The values (volts, rpm, temperature, vehicle speed, system status etc) for the various PIDS displayed may change as the vehicle's operating conditions change.

4. A vehicle usually supports several PIDs, however, only a limited amount of PID data can be displayed on the screen at one time. If additional PID data is available, a small arrow will be shown on the display. Use the **DOWN**  button to scroll down to view all available PID data.













- **Adjust Brightness:** Adjusts the brightness of the display screen.
- **Audible Tone:** Turns the Diagnostic Tool's audible tone "on" and "off." When turned "on," a tone sounds each time a button is pressed.
- **Unit of Measurement:** Sets the Unit of Measurement for the Scan Tool's display to USA or metric.

### Accessing the Adjustments and Settings Menu

1. With the Scan Tool in "Live Data" mode (see VIEWING LIVE DATA on page 32 for details), press and hold the **LD/ENTER** (LD/ENTER) button until the "Mode Selection Menu" appears.
2. Use the **DOWN** (DOWN) button to highlight **Tool Setting**, then press the **LD/ENTER** (LD/ENTER) button.
  - The Adjustments and Settings MENU displays.

```
MENU:
*Custom Live Data
*Vehicle Information
*O2 Sensor Test
*Tool Settings
*Menu Exit
```

### Selecting the Display Language

1. Use the **DOWN** (DOWN) button to highlight **Select Language** in the Setup Menu, then press the **LD/ENTER** (LD/ENTER) button.
  - The LANGUAGE screen displays.
  - The currently selected display Language is highlighted.
2. Press the **DOWN** (DOWN) button, as necessary, to highlight the desired display language.
3. When the desired display language is highlighted, press the **LD/ENTER** (LD/ENTER) button to save your changes and return to the Setup Menu (shown in the selected display language).

```
Setup Menu:
*SELECT LANGUAGE
*Adjust Brightness
*Audible Tone
*Unit of Measurement
*Menu Exit
```

```
Setup Menu:
*SELECT LANGUAGE
*Adjust Brightness
*Audible Tone
*Unit of Measurement
*Menu Exit
```




```
LANGUAGE:
English
Español
Français
```

### Adjusting Display Brightness





1. Use the **DOWN** (DOWN) button to highlight **Adjust Brightness** in the Setup Menu, then press the **LD/ENTER** (LD/ENTER) button.
  - The BRIGHTNESS screen displays.
  - The **BRIGHTNESS** field shows the current brightness setting, from 1 - 8.

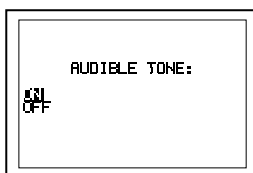
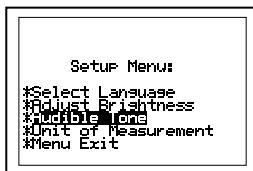
```
Setup Menu:
*Select Language
*Adjust BRIGHTNESS
*Audible Tone
*Unit of Measurement
*Menu Exit
```

```
BRIGHTNESS: 8
Darker/Lighter ↓
```





2. Press the **DOWN**  button to increase the brightness of the display (make the display lighter). When the *maximum* brightness setting is reached and the **DOWN**  button is pressed, the display returns to the *minimum* brightness setting.
3. When the desired brightness is obtained, press the **LD/ENTER**  button to save your changes and return to the Setup Menu.

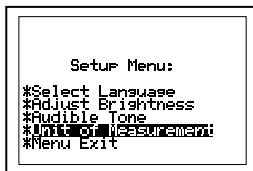
### Enabling the Audible Tone

1. Use the **DOWN**  button to highlight **Audible Tone** in the Setup Menu, then press the **LD/ENTER**  button.
  - The AUDIBLE TONE screen displays.
2. Press the **DOWN**  button to highlight **ON** of **OFF** as desired.
3. When the desired option is selected, press the **LD/ENTER**  button to save your changes and return to the Setup Menu.





### Setting the Unit of Measurement

1. Use the **DOWN**  to highlight **Unit of Measurement** in the Setup Menu, then press the **LD/ENTER**  button.
  - The SELECT UNIT screen displays.
  - The currently selected unit of measurement is highlighted.
2. Press the **DOWN**  button, as necessary, to highlight the desired unit of measurement.
3. When the desired unit of measurement value is selected, press the **LD/ENTER**  button to save your changes and return to the Setup Menu.



### Exiting the MENU Mode

1. Use the **DOWN**  buttons to highlight **Menu Exit** in the Setup Menu, then press the **LD/ENTER**  button.
  - The display returns to the Mode Selection Menu.

# Generic (Global) OBD2 PID List

The following is a list of Generic (Global) PIDs and their descriptions.

Tool Display	Unit	Value	PID Description
ACC Pedal D	%	XXX.X	Accelerator Pedal Position D
ACC Pedal E	%	XXX.X	Accelerator Pedal Position E
ACC Pedal F	%	XXX.X	Accelerator Pedal Position F
Air Status	-	UPS, DNS, OFF	Commanded Secondary Air Status
Ambient	*C / *F	XXX	Ambient Air Temperature
Aux Input Status	-	On / Off	Auxiliary Input Status
BARO	kPa /inHg	XXX / XX.X	Barometric Pressure
Calc LOAD	%	XXX.X	Calculated LOAD Value
CAT Temp 11	*C / *F	XXXX.X	Catalyst Temperature Bank 1- Sensor 1
CAT Temp 12	*C / *F	XXXX.X	Catalyst Temperature Bank 1- Sensor 2
CAT Temp 21	*C / *F	XXXX.X	Catalyst Temperature Bank 2- Sensor 1
CAT Temp 22	*C / *F	XXXX.X	Catalyst Temperature Bank 2- Sensor 2
Command EGR	%	XXX.X	Commanded EGR
Command EVAP	%	XXX.X	Commanded Evaporative Purge
Command TAC	%	XXX.X	Commanded Throttle Actuator
Dist DTC Clr	km /mile	XXXXX	Distance since DTC Cleared
Dist MIL ON	km /mile s	XXXXX	Distance Traveled while MIL ON
ECT	*C / *F	XXX / XXX	Engine Coolant Temp
ECU Volts	V	XX.XXX	Control Module Voltage
EGR Error	%	XXX.X	EGR Error
Eng RPM	min	XXXXX	Engine RPM
EQ Ratio	-	X.XXX	Commanded Equivalence Ratio
EQ Ratio 11	-	X.XXX	Bank 1 - Sensor 1 Equivalence Ratio
EQ Ratio 12	-	X.XXX	Bank 1 - Sensor 2 Equivalence Ratio
EQ Ratio 13	-	X.XXX	Bank 1 - Sensor 3 Equivalence Ratio

# Generic (Global) OBD2 PID List

Tool Display	Unit	Value	PID Description
EQ Ratio 14	-	X.XXX	Bank 1 - Sensor 4 Equivalence Ratio
EQ Ratio 21	-	X.XXX	Bank 2 - Sensor 1 Equivalence Ratio
EQ Ratio 22	-	X.XXX	Bank 2 - Sensor 2 Equivalence Ratio
EQ Ratio 23	-	X.XXX	Bank 2 - Sensor 3 Equivalence Ratio
EQ Ratio 24	-	X.XXX	Bank 2 - Sensor 4 Equivalence Ratio
EVAP Press	Pa /in H2O	XXXX.XX /XX.XXX	Evap System Vapor Pressure
FP / Vac	kPa /PSI	XXXX.XXX /XXX.X	Fuel Rail Pressure relative to Vacuum
Fuel Level	%	XXX.X	Fuel Level Input
Fuel Press	kPa /PSI	XXX / XX.X	Fuel Rail Pressure
Fuel Press	kPa /PSI	XXXXX /XXXX.X	Fuel Rail Pressure
Fuel Sys 1	-	OL	Fuel System 1 Status
Fuel Sys 1	-	CL	Fuel System 1 Status
Fuel Sys 1	-	OL-Drive	Fuel System 1 Status
Fuel Sys 1	-	OL-Fault	Fuel System 1 Status
Fuel Sys 1	-	CL-Fault	Fuel System 1 Status
Fuel Sys 2	-	OL	Fuel System 2 Status
Fuel Sys 2	-	CL	Fuel System 2 Status
Fuel Sys 2	-	OL-Drive	Fuel System 2 Status
Fuel Sys 2	-	OL-Fault	Fuel System 2 Status
Fuel Sys 2	-	CL-Fault	Fuel System 2 Status
IAT	*C / *F	XXX / XXX	Intake Air Temperature
LOAD Value	%	XXX.X	Absolute Load Value
LTFT B1	%	XXX.X	Long Term Fuel Trim-Bank 1
LTFT B2	%	XXX.X	Long Term Fuel Trim-Bank 2
LTFT B3	%	XXX.X	Long Term Fuel Trim-Bank 3
LTFT B4	%	XXX.X	Long Term Fuel Trim-Bank 4
MAF	g/s ;l b/min	XXX.XX /XXXX.X	Air Flow Rate from Mass Air Flow Sensor
MAP	kPa /PSI	XXX / XX.X	Intake Manifold Absolute Pressure
MIL On Time	hrs, min	XXXX, XX	Engine Run Time while MIL ON
Monitor Status	-	ICONS on Display	Monitor Status this Driving Cycle
O2S B1 S1	V	X.XXX	Bank 1 - Sensor 1

# Generic (Global) OBD2 PID List

<b>Tool Display</b>	<b>Unit</b>	<b>Value</b>	<b>PID Description</b>
O2S B1 S1 mA	mA	X.XXX	Bank 1 - Sensor 1 O2S Current
O2S B1 S1 V	V	X.XXX	Bank 1 - Sensor 1 O2S Voltage
O2S B1 S2	V	X.XXX	Bank 1 - Sensor 2
O2S B1 S2 mA	mA	X.XXX	Bank 1 - Sensor 2 O2S Current
O2S B1 S2 V	V	X.XXX	Bank 1 - Sensor 2 O2S Voltage
O2S B1 S3	V	X.XXX	Bank 1 - Sensor 3
O2S B1 S3 mA	mA	X.XXX	Bank 1 - Sensor 3 O2S Current
O2S B1 S3 V	V	X.XXX	Bank 1 - Sensor 3 O2S Voltage
O2S B1 S4	V	X.XXX	Bank 1 - Sensor 4
O2S B1 S4 mA	mA	X.XXX	Bank 1 - Sensor 4 O2S Current
O2S B1 S4 V	V	X.XXX	Bank 1 - Sensor 4 O2S Voltage
O2S B2 S1	V	X.XXX	Bank 2 - Sensor 1
O2S B2 S1 mA	mA	X.XXX	Bank 2 - Sensor 1 O2S Current
O2S B2 S1 V	V	X.XXX	Bank 2 - Sensor 1 O2S Voltage
O2S B2 S2	V	X.XXX	Bank 2 - Sensor 2
O2S B2 S2 mA	mA	X.XXX	Bank 2 - Sensor 2 O2S Current
O2S B2 S2 V	V	X.XXX	Bank 2 - Sensor 2 O2S Voltage
O2S B2 S3	V	X.XXX	Bank 2 - Sensor 3
O2S B2 S3 mA	mA	X.XXX	Bank 2 - Sensor 3 O2S Current
O2S B2 S3 V	V	X.XXX	Bank 2 - Sensor 3 O2S Voltage
O2S B2 S4	V	X.XXX	Bank 2 - Sensor 4
O2S B2 S4 mA	mA	X.XXX	Bank 2 - Sensor 4 O2S Current
O2S B2 S4 V	V	X.XXX	Bank 2 - Sensor 4 O2S Voltage
O2S Location	-	O2S11	Oxygen Sensor, Bank 1, Sensor 1
O2S Location	-	O2S12	Oxygen Sensor, Bank 1, Sensor 2
O2S Location	-	O2S13	Oxygen Sensor, Bank 1, Sensor 3
O2S Location	-	O2S14	Oxygen Sensor, Bank 1, Sensor 4
O2S Location	-	O2S21	Oxygen Sensor, Bank 2, Sensor 1
O2S Location	-	O2S22	Oxygen Sensor, Bank 2, Sensor 1
O2S Location	-	O2S23	Oxygen Sensor, Bank 2, Sensor 3
O2S Location	-	O2S24	Oxygen Sensor, Bank 2, Sensor 4
O2S Location	-	O2S11	Oxygen Sensor, Bank 1, Sensor 1
O2S Location	-	O2S12	Oxygen Sensor, Bank 1, Sensor 2
O2S Location	-	O2S21	Oxygen Sensor, Bank 2, Sensor 1
O2S Location	-	O2S22	Oxygen Sensor, Bank 2, Sensor 2
O2S Location	-	O2S31	Oxygen Sensor, Bank 3, Sensor 1
O2S Location	-	O2S32	Oxygen Sensor, Bank 3, Sensor 2
O2S Location	-	O2S41	Oxygen Sensor, Bank 4, Sensor 1

# Generic (Global) OBD2 PID List

Tool Display	Unit	Value	PID Description
O2S Location	-	O2S42	Oxygen Sensor, Bank 4, Sensor 2
OBD Support	-	OBD2	OBD Requirements
OBD Support	-	OBD	OBD Requirements
OBD Support	-	OBD and OBD2	OBD Requirements
OBD Support	-	OBD1	OBD Requirements
OBD Support	-	No OBD	OBD Requirements
OBD Support	-	EOBD	OBD Requirements
OBD Support	-	EOBD and OBD2	OBD Requirements
OBD Support	-	EOBD and OBD	OBD Requirements
OBD Support	-	EOBD, OBD and OBD2	OBD Requirements
OBD Support	-	JOBD	OBD Requirements
OBD Support	-	JOBD and OBD2	OBD Requirements
OBD Support	-	JOBD and EOBD	OBD Requirements
OBD Support	-	JOBD, EOBD and OBD2	OBD Requirements
PTO Status	-	On / Off	Power Take Off Status
Rel TPS	%	XXX.X	Relative Throttle Position
Spark Adv	deg	XX	Ignition Timing Advance #1 Cylinder
STFT B1	%	XXX.X	Short Term Fuel Trim-Bank 1
STFT B1 S1	%	XXX.X	Bank 1 - Sensor 1
STFT B1 S2	%	XXX.X	Bank 1 - Sensor 2
STFT B1 S3	%	XXX.X	Bank 1 - Sensor 3
STFT B1 S4	%	XXX.X	Bank 1 - Sensor 4
STFT B2	%	XXX.X	Short Term Fuel Trim-Bank 2
STFT B2 S1	%	XXX.X	Bank 2 - Sensor 1
STFT B2 S2	%	XXX.X	Bank 2 - Sensor 2
STFT B2 S3	%	XXX.X	Bank 2 - Sensor 3
STFT B2 S4	%	XXX.X	Bank 2 - Sensor 4
STFT B3	%	XXX.X	Short Term Fuel Trim-Bank 3
STFT B4	%	XXX.X	Short Term Fuel Trim-Bank 4
Time DTC Clr	hrs, min	XXXX, XX	Time since DTC Cleared
Time Since Start	sec	XXXX	Time Since Engine Start
TPS	%	XXX.X	Absolute Throttle Position
TPS B	%	XXX.X	Absolute Throttle Position B
TPS C	%	XXX.X	Absolute Throttle Position C

## Generic (Global) OBD2 PID List

<b>Tool Display</b>	<b>Unit</b>	<b>Value</b>	<b>PID Description</b>
Veh Speed	km/h / mph	XXX / XXX	Vehicle Speed Sensor
Warm-up DTC Clr	-	XXX	# Warm-ups since DTC Cleared







## LIMITED ONE YEAR WARRANTY

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

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

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

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

## SERVICE PROCEDURES

If you have any questions, require technical support or information on UPDATES and OPTIONAL ACCESSORIES, please contact your local store, distributor or the Service Center.

### **USA & Canada:**

(800) 544-4124 (6:00 AM-6:00 PM, Monday-Saturday PST)

**All others:** (714) 241-6802 (6:00 AM-6:00 PM, Monday- Saturday PST)

**FAX:** (714) 432-7511 (24 hr.)

**Web:** [www.innova.com](http://www.innova.com)



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