

***Vehicle Diagnostic
Scan-Tool Software
(VDSTS)***

USER'S GUIDE

Version 2.2

CHAPTER 1

ABOUT VEHICLE DIAGNOSTIC SCAN-TOOL SOFTWARE

Introduction

The Vehicle Diagnostic Scan-Tool Software (VDSTS) is a user friendly software tool able to diagnose engine and system problems.

This Windows based program was designed to communicate with a variety of ECU's.

The interface between the ECU and the PC is through an RS232 interface box. The graphic user interface (GUI) with the help, hotkey, and mouse support will provide a user friendly system.

The main graphic user interface (GUI) consists of a pull-down menu and a tool bar. The execution of the menu items are in the form of numeric controls, commands button controls, pop-up pannels and others.

About this Manual

The Vehicle Diagnostic Scan-Tool Software (VDSTS) User's Guide is a comprehensive guide that contains all of the procedures you need to work with this software. To help you get familiar with the VDSTS and learn efficiently how to operate it, this manual is organized by chapters that describe the use of the software and the commands general description.

Many aspects covered in this manual are also described in the help menu, which is available in the program itself.

System Requirements

In order for this software to perform as expected, the following system configuration is required:

- IBM 486 (or better) or compatible PC with a minimum of 8MB of RAM, although 16MB is recommended.
- VGA Monitor, SVGA monitor or better.
- Windows 95/98/200/Me/NT/XP
- Serial communication port.

Special Terminology

VDSTS. Vehicle Diagnostic Scan-Tool Software.

ECU. Electronic Control Unit.

Technical Support

You can reach us at www.technoresearch.com

CHAPTER 2

GETTING STARTED

Installing the VDSTS

1. Insert Vehicle Diagnostic Scan-Tool Software in your computer's CD-ROM Driver.
2. Select the product software version to be installed: VDSTS Pro or VDSTS Standard
3. Execute the installation program setup.exe
4. Follow the installation instructions.
5. After exiting the installation program, reboot your system (or restart Windows)
6. Connect the hardware key to the parallel or USB port of your computer. The USB or parallel key is only required for the VDSTS-Pro version. VDSTS-Standard version, does not require a hardware key.



Parallel Hardware Key



USB Hardware Key

Starting the VDSTS

Once you have successfully installed the VDSTS, you can run it by double clicking the file "diagtool.exe". A multilanguage screen will come up in order to begin using the software (see multilanguage screen in the next page).



Where to go from here

To get help using the VDSTS, press F1 or click on the contents icon with the left button of your mouse at anytime

CHAPTER 3

USING THE VDSTS

Data Monitoring

In order to display the data you wish to monitor, you have to establish connection with the ECU and set the program either in dashboard mode or strip chart mode.

To establish communication use the *connection* command by either clicking on the communication icon or using the communication menu.

Once communication is established, the data can be monitored through a strip chart as shown in Chapter 4.

While in strip chart mode, you can select the data you want to be displayed using the *channels/view* command and setting them in on or off position.

You can also change the colors of the lines of the strip chart using the *colors* command.

The same data can be shown using the dashboard monitor by clicking on the dashboard icon or using the dashboard option in the communication menu. This option enables you to display the data through slide bars, thermometers, check lights and nubs, as shown in chapter 4.

When communication with the ECU is lost or could not be established, the data would not be available to be displayed and the following error message dialog box will come up:



CHAPTER 4

GENERAL DESCRIPTION

Vehicle Diagnostic Scan-Tool Software Main Menu

The VDSTS offers a main menu, which offers a variety of commands described in the following chapter:



- | | |
|-----------------------------|--|
| File Menu. | Displays a menu with commands to open a file, close an active window and quit the program. |
| Monitor Menu. | Displays a menu with commands related to data monitoring. |
| Communications Menu. | Displays a menu with commands to connect to the ECU, disconnect from the ECU and select port settings. |
| Options Menu. | Displays a menu with a list of commands to select log settings, log on or log off, select the ECU type, select channels, units and color settings. |
| Help Menu. | Displays a variety of help commands |

Vehicle Diagnostic Scan-Tool Software Menu Bar.

The menu bar located at the top of the VDSTS window allows you to display the commands on each menu either by the use of the mouse or the keyboard.

To open the menus and look at the commands, drag across the menu bar with the mouse by pointing to the menu name and clicking the left mouse button, or press the ALT key, and then press the underlined letter in the name of the menu you want to open.





The menu bar consists of the following pull down menus: File, Monitor, Communication, Options, Utilities and Help.















The Toolbar

This toolbar contains buttons that help you complete your most frequent actions, by simply clicking a button with a mouse.



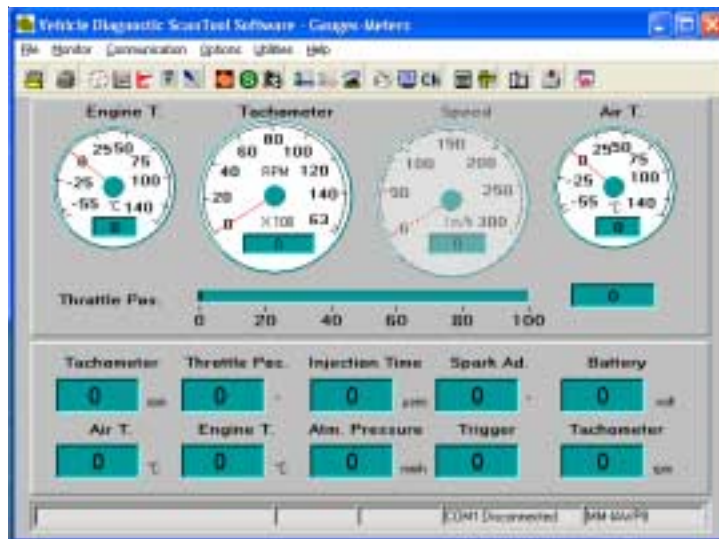
The following table describes each button that appear on the toolbar:

Click:	To:
 Open file...	Open a log. data file
 Dash-Board	Monitor data in dashboard mode
 Strip-Chart	Monitor data in strip chart mode
 Active Test	Perform tests of motorcycle's parts

Click:	To:
 System Error	Activate the Error Screen
 System Status	Activate System Status Screen
 Connect	Establish connection with ECU
 Disconnect	Disconnect from ECU
 Port Setting	Display the Port Settings
 Log ON/OFF	Log on and Log off data
 ECU Type	Display the ECU type being used
 Channels View/Mode	Select data to be monitored
 Color	Change strip colors
 Calculator	Activate the calculator
 Unit Conversion	Display unit conversions
 Contents	Look for reference information
 Search For Help On...	Look for help
 Exit	Quit the active window

Dash-Board monitor command

The *Dash-Board monitor* command opens up a window, which enables the user to view data through bar slides graphs, thermometers and check lights.

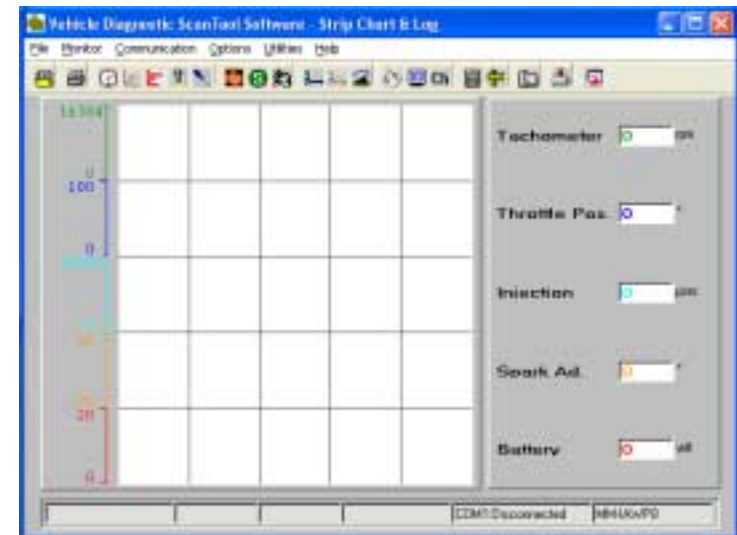


Numeric Data Description

RPM:	Engine RPM numeric value.
Battery:	Battery voltage numeric value.
Spark Advance:	Spark adv. angle numeric value.
Pulse Width:	Pulse width numeric value.
Throttle Position:	Throttle angle numeric value.
Air Temperature:	Air temperature numeric value.
Engine Temperature:	Engine temp. numeric value.
Barometric Pressure:	Barometric press. numeric value.
Stepper Motor:	Stepper motor numeric value.

Strip Chart monitor command

The *Strip Chart monitor* command is used to view data in line plot and numerical form.



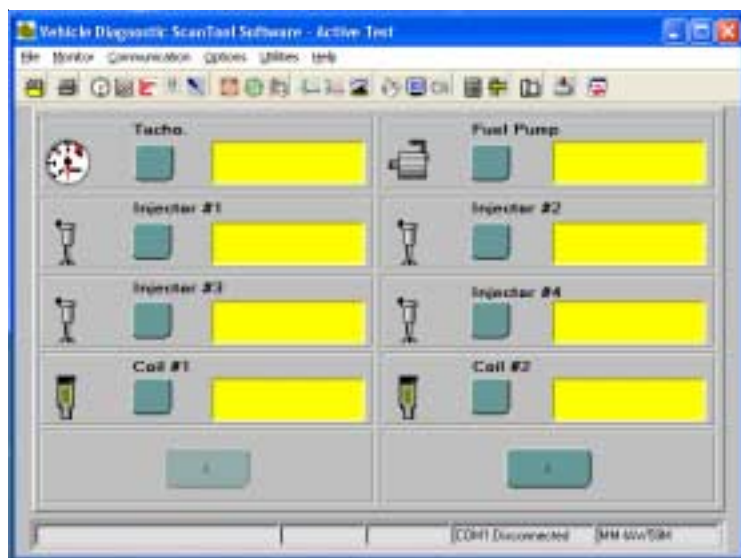
Numeric Data Description

RPM:	Engine RPM numeric value.
Battery:	Battery voltage numeric value.
Spark Advance:	Spark adv. angle numeric value.
Pulse Width:	Pulse width numeric value.
Throttle Position:	Throttle angle numeric value.
Air Temperature:	Air temperature numeric value.
Engine Temperature:	Engine temp. numeric value.
Barometric Pressure:	Barometric press. numeric value.
Stepper Motor:	Stepper motor numeric value.



Active Test command

The Active test command offers a variety of actions in order to test the actuators, adjust the TrimEEPROM and erase historic errors.



Screen buttons

Test. Activates the component being tested for several seconds in order to check its performance.



System Error command

The ECU saves an error in memory if it detects a sensor related problem. Then, the VDSTS will display both current and historic errors.

When a sensor related problem exists, the following error messages would appear for any of the next parameters:

Input Errors

Air temperature:	"O.C/High V." or "S.C./Low V."
Engine temperature:	"O.C/High V." or "S.C./Low V."
Barometric pressure:	"O.C/Low V." or "S.C./High V."
Throttle position:	"O.C/High V." or "S.C./Low V."
Cam position:	"O.C/High V." or "S.C./Low V."
Tip sensor:	"O.C/High V." or "S.C./Low V."
Crank position:	"Crank Pos Signal Error (LED red)"
Battery Voltage:	"O.C/High V." or "S.C./Low V."
Crank/Cam:	"Crank/Cam Signal Error (LED red)"

Output Errors

Injector #1:	"O.C/Low V." or "S.C./High V."
Injector #2:	"O.C/Low V." or "S.C./High V."
Coil #1:	"O.C/Low V." or "S.C./High V."
Coil #2:	"O.C/Low V." or "S.C./High V."
Tachometer:	"O.C/Low V." or "S.C./High V."

Where:

O.C.	Open Circuit
S.C.	Short Circuit
High V.	High Voltage
Low V.	Low Voltage

Function Errors

ECU microP.: "ECU microP Signal Error (LED red)"
ECU EEPROM: "ECU EEPROM Signal Error (LED red)"
ECU ROM: "ECU ROM Signal Error (LED red)"
ECU RAM: "ECU RAM Signal Error (LED red)"

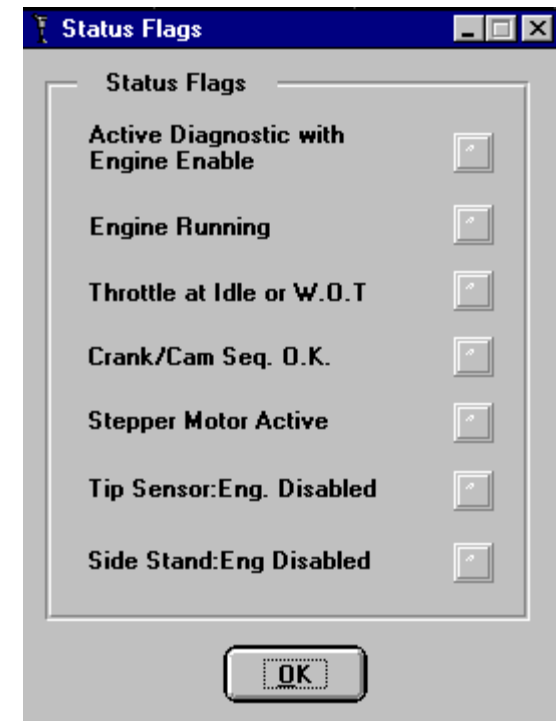
Trip since last fault: Indicates how many trips the Motor-cycle has performed since an error has been detected.

Screen buttons

OK. Closes the dialog box and completes the command using the selected options.

System Status Command

The System Status Command displays a window, which shows all the status flags.



Screen buttons

OK. Closes the dialog box and completes the command using the selected options.

Communication menu commands

The Communication menu contains a variety of commands, which are used to connect and disconnect the communication from the controller. These commands are listed below:



Connect. Establishes connection with the ECU being used.



Disconnect. Terminates communication with ECU.

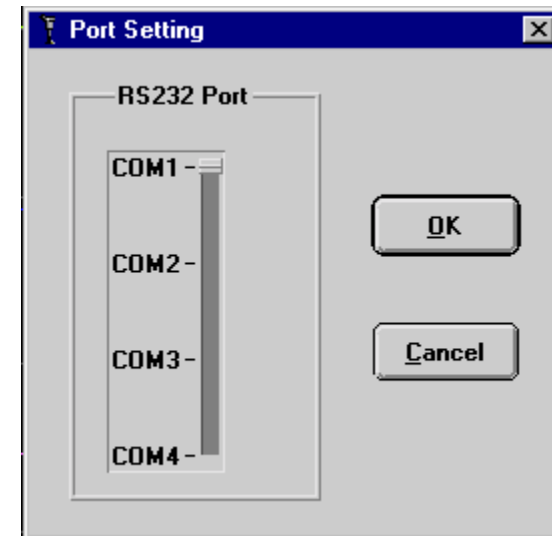


Port Setting. Offers a list of RS232 serial ports to select.



Port Setting command

The Communication Port command displays a window that enables the user to select the RS232 communication port.



Screen Buttons

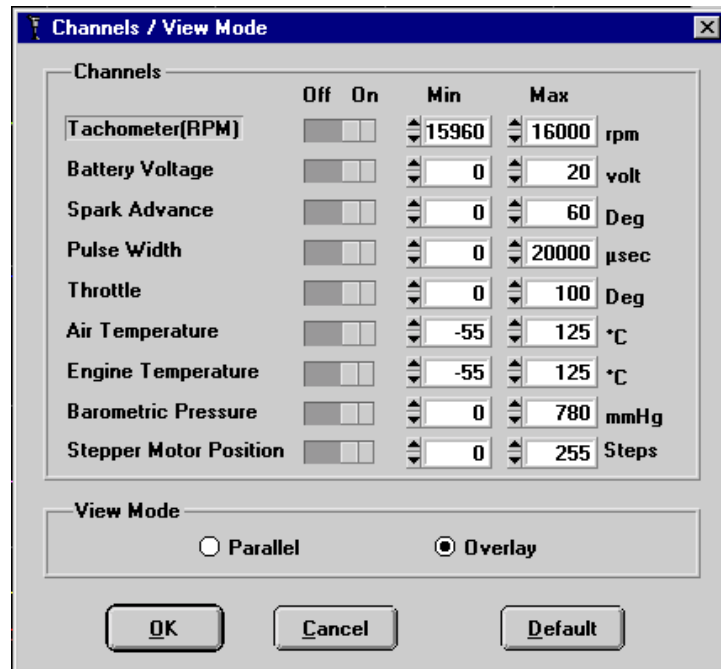
- OK.** Closes the dialog box and completes the command using the selected options.
- Cancel.** Discards the options you have selected, closes the dialog box and returns to the previous screen.

Options menu commands

The Options menu contains a variety of commands that allows the user to select several options such as scale adjusting, color settings, ECU types, log settings, Units settings, calculator and units converter.

Ch Channels/Mode command

The Channels/Mode command activates the following screen:



Channels Features

In the Channels section of this window you can activate or deactivate any of the parameters when performing the monitoring by setting them in off or on mode.

In the *Min.* and *Max.* fields you can set the minimum and maximum scale values to set monitor data graph.

View Mode Features

Parallel: Activates an individual chart for each channel to be displayed in the same screen using independent scales for each parameter.

Overlay: Activates the overlay mode, showing all the parameter graphs using the same scale for each of them.

Screen buttons

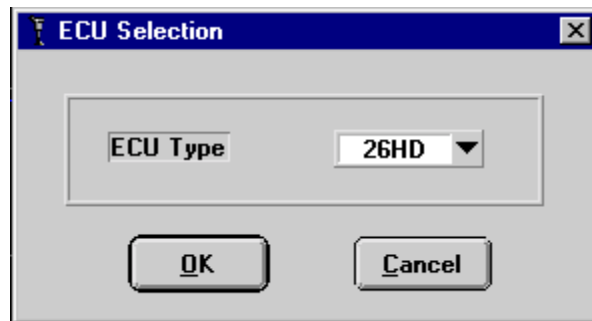
OK. Closes the dialog box and completes the command using the selected options.

Cancel. Discards the options you have selected, closes the dialog box and returns to the previous screen.



ECU commands

The ECU command allows the selection of the various ECU types accordingly.



Screen buttons

ECU Type. Displays a list of options to select the ECU to be used.

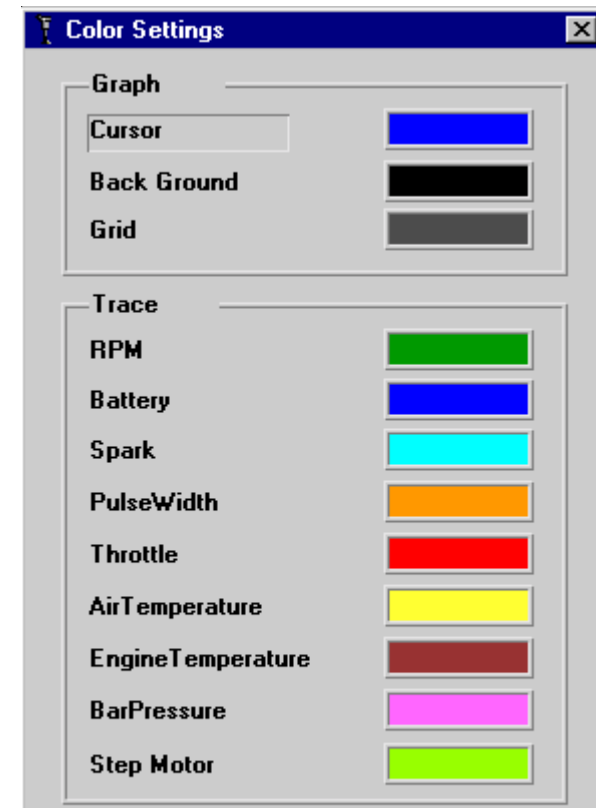
OK. Closes the dialog box and completes the command using the selected options.

Cancel. Discards the options you have selected, closes the dialog box and returns to the previous screen.



Color command

The Color command displays a window that allows you to select the different color settings for the strip chart.



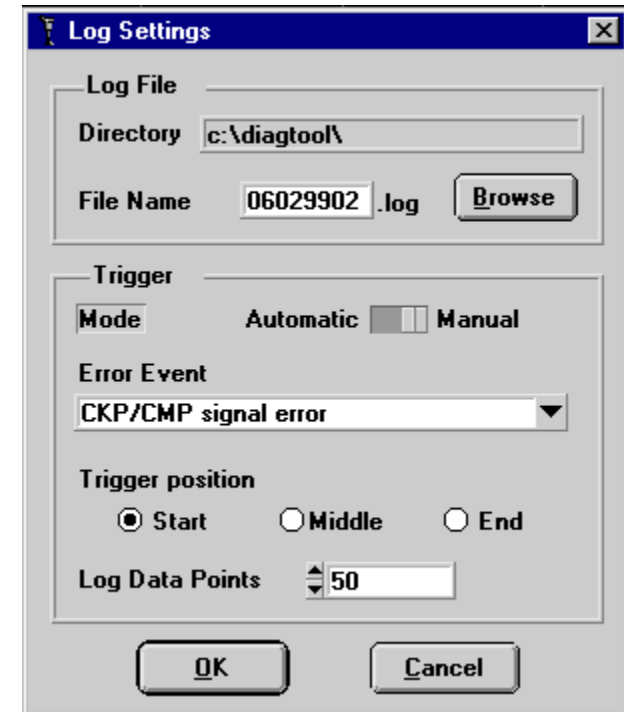
To change a color setting for any of either the graph or trace parameters, just click on the bar color you wish to change, keep the left button of the mouse pressed and select the color that you choose from the displayed palette.

Screen buttons

- OK.** Closes the dialog box and completes the command using the selected options.
- Cancel.** Discards the options you have selected, closes the dialog box and returns to the previous screen.

Log Settings command

The Log Settings command allows the setting up of the data capturing. The triggering can be set up automatically to capture as many data points as specified in the *Log Data Points* field when an error event is set. The data can be recorded in three different ways (start, middle and end), from the moment of the trigger, half the data points before the moment of the trigger and half the points after the trigger, or all the data points that preceded the trigger.



Log File Features

Browse: Allows the selection of a filename

Trigger Features

Mode: Sets the mode in which the data capturing is going to be triggered.

Error Event: Displays a list of error events in order to set up the triggering everytime the chosen error occurs.

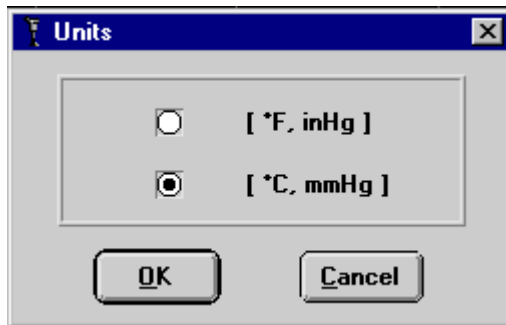
Trigger Position: Allows the set up of the three different ways that data can be captured.

Screen buttons

- OK.** Closes the dialog box and completes the command using the selected options.
- Cancel.** Discards the options you have selected, closes the dialog box and returns to the previous screen.

Unit command

The Unit command offers a window to select the type of unit system.

**Options**

- (°F, inHg).** Displays the data using the English unit system.
- (°C, mmHg).** Displays the data using the SI unit system.

Screen Buttons

- OK.** Closes the dialog box and completes the command using the selected options.
- Cancel.** Discards the options you have selected, closes the dialog box and returns to the previous screen.

Utilities Menu Commands

The Utilities Menu displays the *Calculator* command and the *Units Conversion* command both are for general purpose calculations.

**Calculator command**

The Calculator command activates a calculator for general purpose calculations.

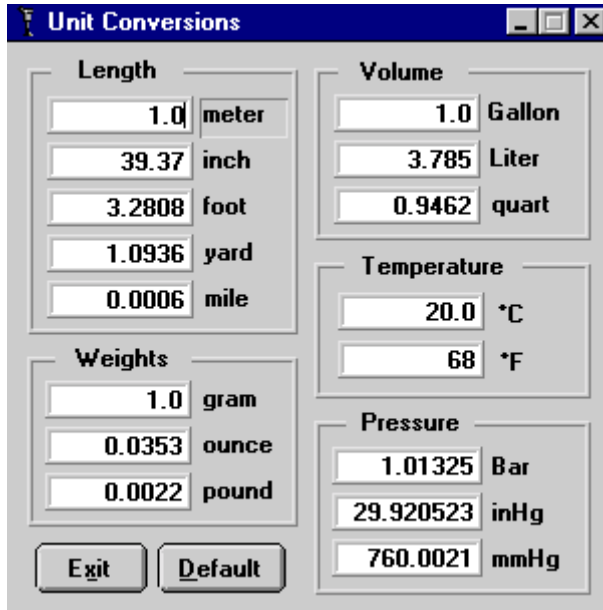
In order to perform calculations, you can use either the mouse or the keyboard.

**Screen buttons**

- OFF.** Deactivates the calculator and exits this window.

Unit Conversion command

The Unit Conversion command displays a window that contains the most used unit conversions for general purposes.



The **Unit Conversions** dialog box is divided into several sections for different types of measurements:

- Length:** Includes input fields for meter (1.0), inch (39.37), foot (3.2808), yard (1.0936), and mile (0.0006).
- Weights:** Includes input fields for gram (1.0), ounce (0.0353), and pound (0.0022).
- Volume:** Includes input fields for Gallon (1.0), Liter (3.785), and quart (0.9462).
- Temperature:** Includes input fields for °C (20.0) and °F (68).
- Pressure:** Includes input fields for Bar (1.01325), inHg (29.920523), and mmHg (760.0021).

At the bottom of the dialog are two buttons: **Exit** and **Default**.

Screen buttons

- Exit.** Discards the options you have selected, closes the dialog box and returns to the previous screen.
- Default.** Closes the dialog box and completes the command keeping the conversions with the new data entered by default.

Help Menu Commands

In order to provide assistance at anytime, the *Help* menu offers the following commands:

- Contents.** Offers you an index of topics on which you can get help.
- Search For Help On...** Provides general instructions on using help.
- About.** Displays the version number of this application.



Contents command

The *Contents* command displays the Help screen. From this screen, you can jump to step-by-step instructions for using VDSTS and various types of reference information.

Once you open Help, you can click the *Contents* button at anytime if you want to return to the opening screen.



Search For Help On... command

The *Search For Help On . . .* command offers instructions about using Help.

About command

The *About* command displays the copyright notice and version number of your copy of Vehicle Diagnostic Scan-Tool Software.

