

Win Pro-Flo

USER'S GUIDE

WIN PRO-FLO

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Version 1.0 for Windows

Win Pro-Flo

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CHAPTER 1

ABOUT Win Pro-Flo

Introduction

The Win Pro-Flo is a user friendly software tool able to diagnose and calibrate engines.

This Windows based program was designed to communicate with a Magneti Marelli Q13 ECU .

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 panels and others.

About this Manual

The Win Pro-Flo 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 Win Pro-Flo 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 3.1, Windows 95, Windows 98 and Windows NT.
- Win Pro-Flo installation diskettes for Windows.
- Software security key.
- Communication cable.

Special Terminology

WIN PRO-FLO. Win Pro-Flo.

ECU. Electronic Control Unit.

Technical Support

You can reach TechnoResearch's technical support department in any of the following ways:

CHAPTER 2

GETTING STARTED

Installing the WIN PRO-FLO

1. Make a backup copy of the diskettes for safety purposes
2. Insert Win Pro-Flo for Windows install Disk in your computer's floppy disk drive.
3. In Windows 3.1, choose the Windows Program Manager..
4. In Windows 3.1, from the File menu of the Program Manager, choose Run. In Windows 95, click the Start button and then choose Run.
5. Type a:setup if you are installing from the Drive A, or b:setup if you are installing from Drive B. Click O.K. to continue.
6. Follow the installation instructions.

To install a Sentinel System Driver:

1. Make a backup copy of the diskettes for safety purposes
2. Insert Win Pro-Flo for Windows install Disk in your computer's floppy disk drive.
3. In Windows 3.1, choose the Windows Program Manager..

4. In Windows 3.1, from the File menu of the Program Manager, choose Run. In Windows 95, click the Start button and then choose Run.
5. Type a:RainbowSSD5.39.2 if you are installing from the Drive A, or b:setup if you are installing from Drive B. Click O.K. to continue.
6. Follow the installation instructions.

WIN PRO-FLO Set up

1. Attach one end of the adapter cable to the DB-9 connection port of the computer. Attach the other end of the adapter cable to the data link connector located on the motorcycle.

NOTE: When unplugging the DB-9 connector, DO NOT pull the cable, grasp the connector to prevent damage.

2. Turn the ignition switch to the "Ignition" position and turn the engine stop switch located on the handle bar to the "Run" position.
3. Attach the hardware key to the parallel port of the computer.

Starting the WIN PRO-FLO

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

Where to go from here

To get help using the WIN PRO-FLO, press F1 or click on the contents icon with the left button of your mouse at anytime.

CHAPTER 3

USING THE WIN PRO-FLO

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 in a variety of graphical forms, 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:



Checking Diagnostic Trouble Codes (DTC) & Lambda Status

If you are connected and monitoring data through the strip chart or the dashboard, you can also check if there are any input, output or function errors in the system.

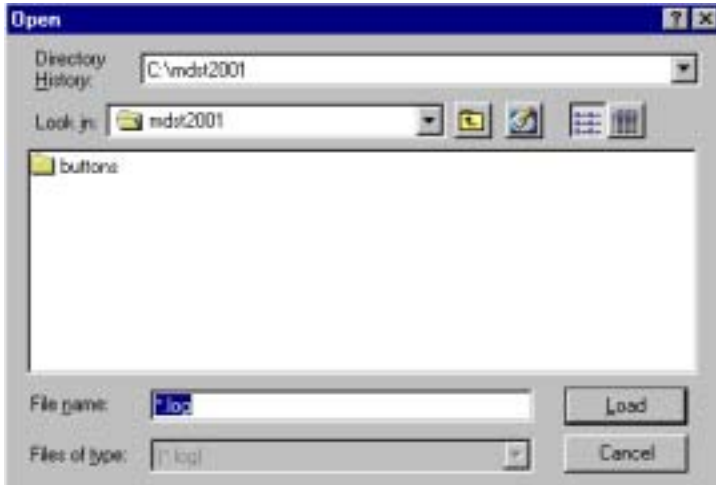
To do so, use the *system error* command and the screen shown in chapter 4 will appear.

This screen would show you exactly what part of the motorcycle is not working properly and it needs to be fixed.

Likewise, if you wish to know the System Status while using the software, just click on the *system status* icon respectively or use the *system status* command in the monitor menu. Refer to chapter 4 to see details regarding the systems status screen.

Opening, Closing and Saving a Data File

If you want to check and open an old file, use the *open file...* command and the following screen will be activated for you to select the file you wish to review:



In order to open a file you have selected, double click on the file and then hit the *OK* button.

Then, a strip chart with the data you want to be displayed will appear. Refer to Chapter 4, *Open File...* command for more details.

When working on an old file, you can also use the *channels/view* and *colors* command as described in the Monitoring Data section.

To close an opened file you can either use the *close window* command or go to any other screen and the file would be closed automatically.

In order to save or log a data file, you have to use the strip chart command and get connected with the motorcycle's ECU to begin monitoring the data you want to start logging on.

Once connected, use the *log on* command to start saving the data and the *log off* command to finish with the data file saving operation.

The name of the files would be automatically assigned by using the current date with a log extension. An example of a file saved on July 24th, 2001 ;could be: 07242001001.log.

If you have saved several files in the same day, a consecutive sequential digit would be assigned to the file, such as, 07242001002.log and so on.

If you wish to retrieve a file you have saved, proceed as described in the beginning of this section.

CHAPTER 4

GENERAL DESCRIPTION

Win Pro-Flo Main Menu

The WIN PRO-FLO 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, export to ASCII, print, close an active window and quit the program.
Monitor Menu.	Displays a menu with commands related to data monitoring.
Edit Menu.	Displays a menu with commands related to calibration files.
Communications Menu.	Displays a menu with commands to connect to the ECU, disconnect from the ECU and select port settings.
Reflash Menu.	Displays a menu with a list of command related to downloading, uploading, storing and restoring calibrations.
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

Win Pro-Flo Menu Bar.

The menu bar located at the top of the WIN PRO-FLO 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.



File Menu Commands

The file menu contains a variety of commands which are used to view data for post analyses, close an active window and exit from the program. These commands are listed and described below as follows:

New... Allows the user to create a new calibration file.

Open... Allows the user to open an existing calibration file.
A dialog box will appear to specify the selected file.

Save As... Allows the user to save a calibration file.

Open Data Analysis... Allows the user to open a log file.

Export to ASCII.Creates an ASCII file from a log file.

Print. Prints the active window

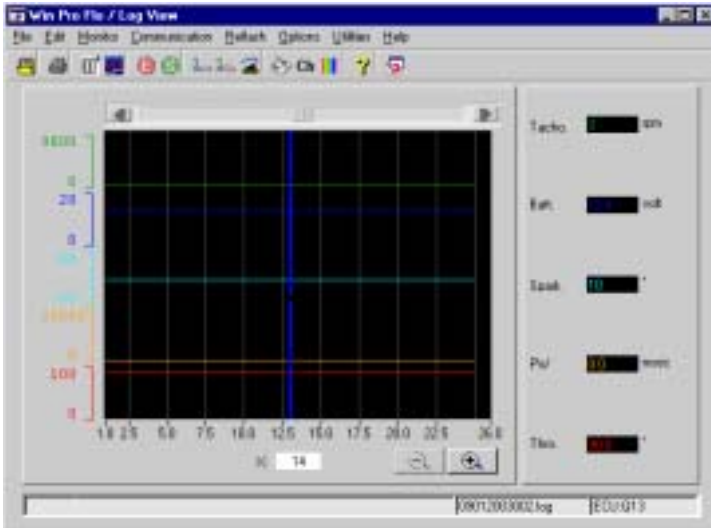
Close Window. Closes the active window

Exit. Allows the user to quit the program at anytime.



Open Data Analysis... command

The *Open...* command is used to view data for post analysis. The following screen represents a data file opened by using this command:



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.
Idle %:	Idle % numeric value.
VAC:	Vaccume numeric value.
Target RPM:	Target rpm numeric value

Special Functions Description

- Zoom In (+):** Zooms in to the graph by clicking with the mouse on the zoom in button.
- Zoom Out (-):** Zooms out of the graph by clicking with the mouse on the zoom out button.
- Scroll (↔):** Scrolls through the graph by clicking with the mouse on the left or right arrow.

Monitor Menu commands

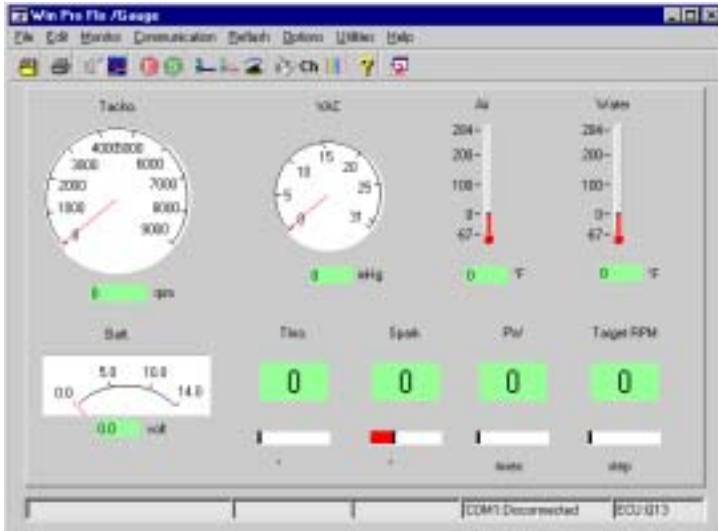
The Monitor Menu displays a menu with commands used to view data in several forms and test actuators. These commands are described below:

- Gauges/Meters Monitor.** Displays data in real time in a gauge/meter form.
- Strip Chart Monitor.** Displays data in a strip chart form. You can log ON/OFF and turn trigger settings from this data monitor window.
- System Errors.** Displays the Diagnostic Trouble Codes.
- System Status.** Displays the current lambda status.



Gauges/Meters monitor command

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



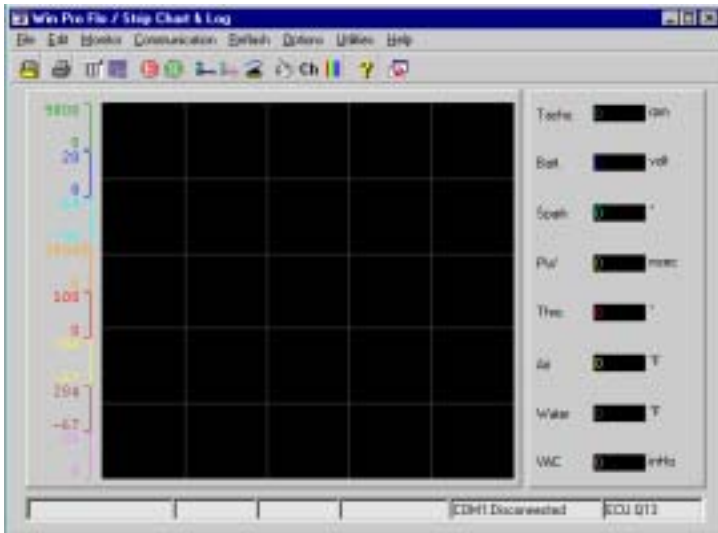
Data Description

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.
Idle %:	Idle % numeric value.
VAC:	Vaccume numeric value.
Target RPM:	Target rpm numeric value



Strip Chart monitor command

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

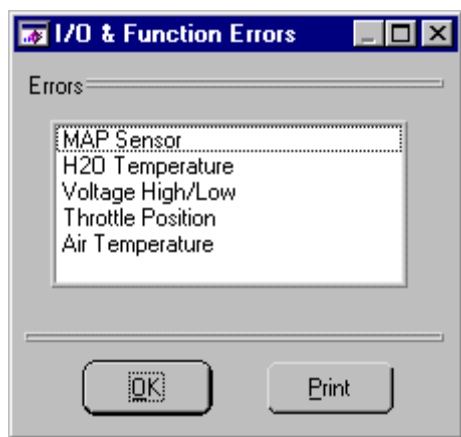


Data Description

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.
Idle %:	Idle % numeric value.
VAC:	Vaccume numeric value.
Target RPM:	Target rpm numeric value.

System Error command

The ECU saves an error in memory if it detects a sensor related problem. Then, the WIN PRO-FLO will display both current and historic errors in the following screen:



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

Map Sensor
H2O Temperature Sensor
Voltage High/Low
Throttle Input Sensor
Air Temperature Sensor
O2 Sensor

Screen buttons

O.K. Closes the dialog box and completes the command using the selected options.



Lambda Status Command

The Lambda Status Command displays a window, which shows all the lambda flags.



Screen buttons

O.K.: 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.

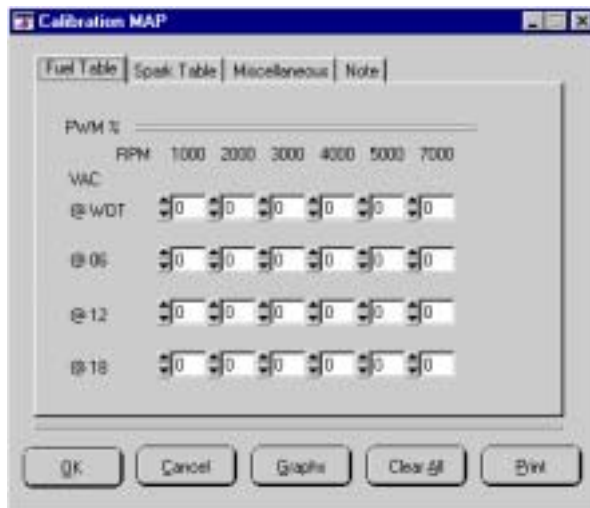


Port Setting.

Offers a list of RS232 serial ports to select.

Off-Line/Real-Time Calibration Command

The Calibration Off-Line Command displays a window, which shows the fuel table, spark table, miscellaneous and note information pertaining to the Calibration.



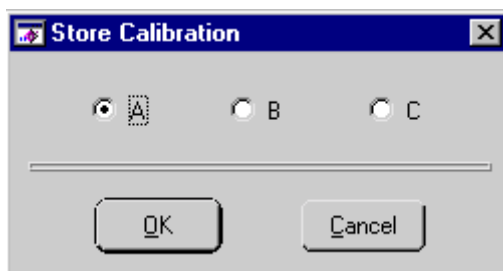


Screen buttons

O.K.:	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.
Graphs:	Graphs the fuel and spark table data in a three dimensional form.
Clear All:	Clears all the fields in the Panel.
Print:	Prints the active window.

Store ECU Calibration Command

The Store ECU Calibration Command displays a window, which shows all the options in which you can store the calibration to.

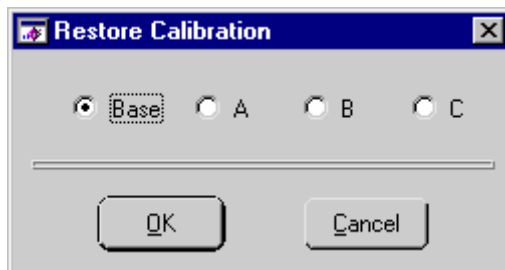


Screen Buttons

- | | |
|--------------|---|
| O.K.: | 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. |

Restore ECU Calibration Command

The Restore ECU Calibration Command displays a window, which shows all the options in which you can restore the calibration from.



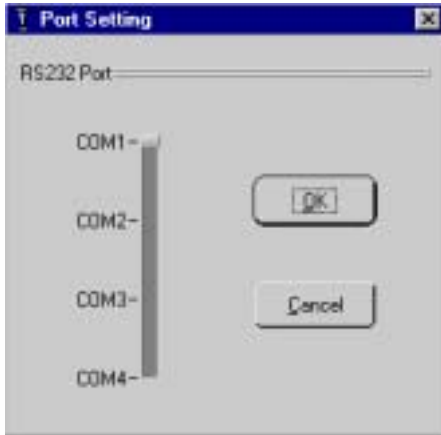
Screen Buttons

- O.K.:** 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.



Port Setting command

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



Screen Buttons

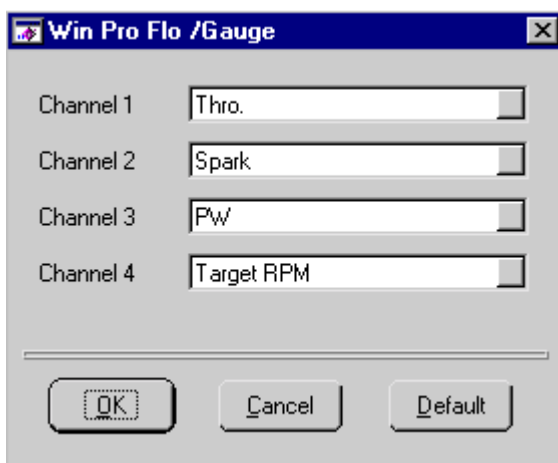
- O.K.** Closes the dialog box and completes the command using the selected options.
- Cancel:** Discards the options you have selected, closes the dialog box and returns to the previous screen.

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.

Default: Sets the default Min. Max. scale values.

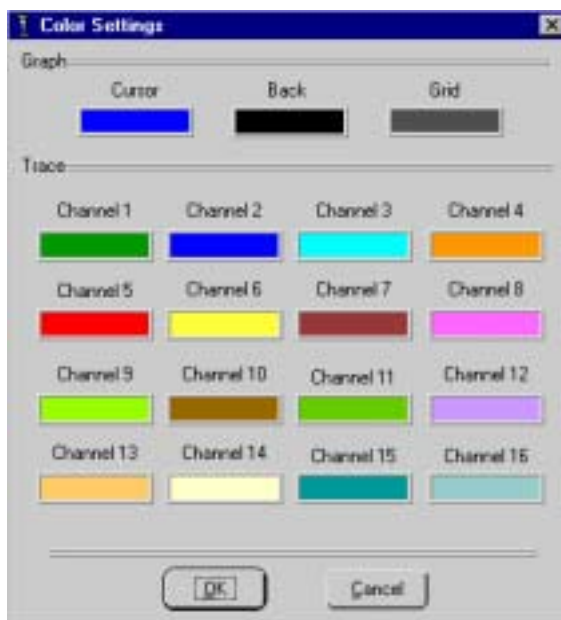
Screen buttons

O.K.: Closes the dialog box and completes the command using the selected options.

Cancel: Discards the options you have selected, closes

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

- O.K.** 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 Settings

Log File

Directory: D:\vmdst2000\

File Name: 3052001001.log Browse

Trigger

Mode: Manual ☐ Automatic ☐

☐ Error Event ☒ ECU Data ☐ Diagbook Data

Tacho. ▼

Threshold: 90.00 rpm

Edge: ☒ Rising ☐ Falling

Trigger position: ☐ Start ☐ Middle ☒ End

Log Data

Sampling Rate: 50 Hz

Sampling Duration: 10 seconds

Log Data Points: 50

OK Cancel

Log File Features

Browse: Allows the selection of a file name

Trigger Features

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

Error Event/Ecu Data:

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.

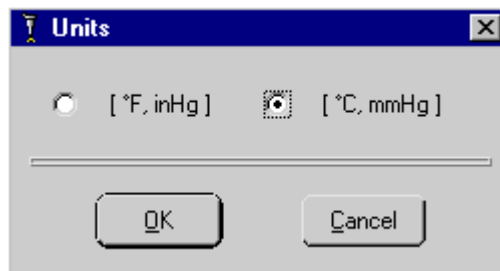
Screen buttons

O.K.: 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

- | | |
|----------------|---|
| O.K.: | 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

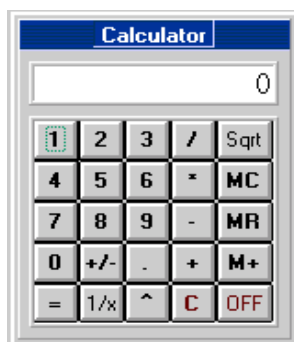
The Utilities Menu displays the *Calculator* command and the *Units Conversion* command both are for general purposes calculations.



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 units conversions for general purposes.

Section	Unit 1	Value	Unit 2
Length	meter	1.0	
	inch	39.37	
	foot	3.2808	
	yard	1.0936	
	mile	0.0006	
Volume	Gallon	1.0	
	Liter	3.785	
	quart	0.9462	
Temperature	°C	20.0	
	°F	68	
Weights	gram	1.0	
	ounce	0.0353	
	pound	0.0022	
Pressure	Bar	1.01325	
	inHg	29.920523	
	mmHg	760.0021	

Buttons: Exit, 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 WIN PRO-FLO and various types of reference information.

Once you open Help, you can click the *Contents* button at any-time 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 Win Pro-Flo.